

***FINAL REPORT FOR REMEDIATION OF LOCATIONS
IN GRANITE CITY, MADISON, AND VENICE, ILLINOIS
ASSOCIATED WITH NL INDUSTRIES/TARACORP
SUPERFUND SITE***

***PRE-PLACED CONTRACT NO.
DACA45-96-D-0014
DELIVERY ORDER NO. 0011***

Submitted by:

***OHM Remediation Services Corp.
Midwest Region***

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Project 20366**

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EPA Region 5 Records Ctr.



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1.0 INTRODUCTION

The United States Army Corps of Engineers (USACE) tasked OHM Remediation Services Corp. (OHM), a wholly owned subsidiary of OHM Corporation, under the Pre-Placed Contract No. DACA45-96-D-0014, Delivery Order (DO) No. 0011, to perform remediation of Stack Emission sites at various locations associated with the NL Industries/Taracorp Superfund Site (NL Site) in Granite City, Madison, and Venice, Illinois.

1.1 SITE HISTORY

The NL Site includes the NL Industries/Taracorp Plant, a former secondary lead smelting operation located at 16th and Cleveland Boulevard in Granite City, Illinois. Prior to 1903, the plant included various smelting related equipment and processes. From 1903 to 1983, secondary lead smelting occurred on site. These activities were discontinued during 1983 and the equipment was dismantled.

In July 1981, St. Louis Lead Recyclers, Inc. (SLLR) began using equipment on adjacent property owned by Trust 454 to separate components of the Taracorp waste pile. The objective was to recycle lead bearing materials to the furnaces at Taracorp and send hard rubber off site for recycling. SLLR continued operations until March 1983 when it shut down its equipment. Residuals from the operation remain on Trust 454 property as does some equipment.

A State Implementation Plan for Granite City, Illinois, was published in September 1983 by the Illinois Environmental Protection Agency (IEPA). The IEPA's report indicated the lead non-attainment problem for air emissions in Granite City, Illinois, were in large part due to emissions associated with the operation of the secondary lead smelter operation by Taracorp and lead reclamation activities conducted by SLLR. The IEPA procured Administrative Orders by Consent with Taracorp, SLLR, Stackcorp, Inc., Tri-City Truck Plaza, Inc., and Trust 454 during March 1984. The orders required the implementation of remedial activities relative to air quality.

NL Industries, as former owner of the location, voluntarily entered into an Agreement and Administrative Order by Consent with United States Environmental Protection Agency (USEPA) and IEPA in May 1985 to implement a Remedial Investigation/Feasibility Study (RI/FS) for the location and other potentially affected areas. Taracorp was not a party to the agreement due to the fact it filed for bankruptcy. The USEPA determined the location was a Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) facility and it was placed on the National Priorities List on June 19, 1986.

1.2 DOCUMENT ORGANIZATION

This final project report is intended to provide a detailed description of the tasks involved in performing the work. Section 2.0 describes the scope of work involved in the preparation of the site-specific plans, performance of site administration/logistical support, mobilization/demobilization, site preparation/teardown, and the operational/technical scope of work performed. Section 2.0 also compares the actual scope of work performed with the planned scope of work in general terms. Section 3.0 describes the technical approaches implemented to accomplish the operational and technical tasks of the project including sampling, analysis, waste transportation, and waste disposal. Section 4.0 describes the Health and Safety

approaches implemented to accomplish the operational tasks of the project. Section 5.0 and 6.0 contain the quantity summary tables and verification analytical summary tables respectively. Appendix A depicts the Flow Charts showing work performance. Appendix B provides detailed descriptions of the work performed at each remedial location, as well as, tables and maps detailing the sampling and analysis.

2.0 SCOPE OF WORK

The scope of work for this project was delineated by the documents USACE supplied to OHM entitled: *Scope of Work for Contract DACA45-95-R-0015, Stack Emissions (Lead) Removal, Madison, Illinois*.

The scope of work generally encompassed the following tasks:

- Preparation of site-specific plans
- Site administration and logistical support
- Mobilization and demobilization
- Site preparation and teardown
- Excavation, Backfill, and Compacting
- Turf
- Operational scope of work
- Waste transportation and disposal

2.1 PREPARATION OF SITE-SPECIFIC PLANS

OHM revised the site-specific project work plan (WP) from DO 17 to serve as a guideline describing how the work was to be performed in order to meet the requirements specified by USACE. The WP also included the chemical data acquisition plan (CDAP) and the location-specific health-and-safety plan (LSSHPP).

Variances to the WP occurred during the project but were conducted only under authorization/direction of the USACE on-site representative(s). His/her purpose was to allow the project to function more efficiently while still remaining within all regulatory requirements. These variances are referenced and described in the relevant sections of this report.

The CDAP was prepared as a guideline to describe how, where, and how many samples would be collected. The laboratory analysis methods to be used, per the requirement of USACE's revised scope of services, were also outlined in the CDAP. In response to existing field conditions, this CDAP was amended to add the quality assurance project plan (QAPP) during the actual performance of work (see Section 2.6 for these amendments).

The LSSHPP was prepared as a guideline describing the health and safety procedures, which would be followed during the performance of the project. LSSHPP addressed physical, chemical, and environmental hazards unique to this project site. This LSSHPP was amended prior to the project to allow remedial work to

be performed by personnel wearing modified USEPA Level D personal protective equipment (PPE). The results of air monitoring indicated personnel could safely perform work at the remedial locations wearing poly tyvek suits, booties, gloves, hard hats, and safety glasses without respirators. Details pertaining to health and safety issues are discussed in Section 4.0, Health and Safety Summary.

2.2 SITE ADMINISTRATIONAL/LOGISTICAL SUPPORT

The project site administration was centrally located at # 10 Farrish in Madison, Illinois. Site administrative activities performed from this location included:

- Site Supervisor
- Cost tracking/reporting
- Health and Safety administration
- Waste tracking/documentation
- Field sampling/analytical support
- Field purchasing/subcontract management
- Logistical support

Prior to the physical work, logistical preparation activities were performed, including the following activities:

- Conduct a pre-construction meeting
- Verifying waste hauling licenses
- Meeting with property owners
- Locating utilities at necessary sites
- Establishing transportation routes
- Coordinating with local agencies and hospital

2.3 MOBILIZATION/DEMOBILIZATION

OHM performed mobilization of personnel and equipment primarily from its facility in O'Fallon, Missouri. A large percentage of the heavy equipment utilized on this project came from local vendors acting as subcontractors.

2.3.1 Subcontractors

Subcontractor activities were managed by the OHM project manager and site supervisor, and by USACE when necessary. Subcontractors were responsible for transportation, disposal, backfill material, sod and on-site equipment.

2.3.2 Permits

All necessary permits and licenses were secured before site mobilization. The transporter companies and disposal facilities were USEPA-licensed. Prior to mobilization, all on-site employees completed Occupational Safety and Health Administration (OSHA) 40-hour hazardous material training.

2.4 MOBILIZATION/DEMOBILIZATION

Sites were set up and/or torn down at each remedial lot.

2.4.1 Command Center

The command center served as the central location from which all personnel were dispatched to their respective work locations each day or as needed. The command center was located inside of a secured building and was equipped with computers, copiers, facsimile machine, telephones, and base radio. The rear of the building also served as a storage area for OHM's equipment, tools, and materials.

2.4.2 Remedial Locations

Site preparation was performed at each of the remedial locations. OHM set up decontamination points for personnel and equipment and exclusion zones were established prior to excavation. These exclusion zones were identified with orange snow fencing and yellow caution tape across existing fencing. They remained in place until backfill had been completed to a sufficient depth.

Excavation equipment used on the site was decontaminated prior to demobilization or backfill. Gross contamination was scraped from the machines before they were washed. As a dust control measure, the decontamination rinse water was collected and applied to the last load of contaminated soil.

2.5 OPERATIONAL SCOPE OF WORK PERFORMED

The excavation activities involved the removal of contaminated soils from the remedial sites. Restoration involved backfilling, seeding, and sodding of the sites after completing the remedial activities. The scope of work for this portion of the project is illustrated in Figure 2.1.1 The operations Flow Chart is depicted in Appendix A-1.

OHM's schedule for excavation was developed to facilitate logistical management and limit the time required to transport equipment and crews from location to location. During excavation activities, engineering controls and security measures, such as surrounding the exclusion zones with fluorescent orange polyvinyl chloride (PVC) barrier fencing, were employed to prevent cross contamination and unauthorized entry into exclusion zones.

Each of the stack emission sites had unique characteristics which mandated particular methodologies of remediation.

2.5.1 Pre-construction Activities

Pre-construction activities for this portion of the project included the following items:

- Conducting a pre-construction meeting with USACE

- Issuing subcontracts
- Communication with Julie Corporation (the utilities' identification organization in Illinois) to locate potential underground utilities at the site
- Obtaining permits
- Obtaining soil samples for waste characterization
- Videotaping residential properties for restoration purposes

2.5.2 Construction Activities-Lots

The excavation techniques employed at each location varied according to location accessibility, depth, and extent of material. Minimization of disturbances to adjoining properties/areas was also a key consideration in performing each excavation. OHM used Bobcat mini-excavators, TL26, Takeuchi, TCM806 along with Kubota Tractors and manual removal methods.

Dust control was a major consideration. A storage system with pump and hose were available at all times to prevent fugitive emissions. Water trucks were also utilized to provide additional dust control and to transport water to sites for decontamination.

Most of the residential yards needed to have sod removed at varying depths of soil. Wastes were excavated using a track excavator, Takeuchi, and/or a Bobcat. At some locations, hand digging was necessary. Special soil was loaded into licensed waste hauler trucks for transportation to the disposal facility.

Most of the driveways contained aggregate soil mixtures. Most locations were accessible but required smaller equipment and hand digging. Non-hazardous waste (special waste) was classified analytically. The special waste was loaded into licensed haul trucks and sent to the disposal site.

2.5.4 Restoration

After excavation to predetermine depth had been achieved, OHM restored the location to pre-remedial conditions. Excavation areas were backfilled with clean soil and restoration was completed as required by the specifications. Sodding, seeding, and revegetation were performed when necessary.

2.5.5 Waste Removal

Wastes removed from the sites were transported to one of two locations. Milam RDF/Chain of Rocks. Figure A-2 in Appendix A shows the flow chart for T&D.

2.6 SAMPLING AND ANALYSIS

The following paragraphs detail the sampling and analysis tasks, as well as CDAP amendments/adjustments.

2.6.1 Sampling and Analysis Tasks

The sampling and analysis tasks for this project involved the following items:

- Street Sweeping
- Pre-characterization sampling and analysis of sites included as delineated by USACE
- Pre-characterization sampling and analysis of additional sites
- Resample (stack emission) as directed by USACE
- Backfill sampling

Street Sampling

OHM collected random grab samples from streets, as directed by USACE, for the purpose of determining the lead content of the street.

As per the scope of services issued to OHM by USACE, material at the residential sites exhibiting concentrations of total lead greater than 500 mg/kg were to be removed and disposed.

Samples were collected from one point in the front yard and one point in the back yard. Both samples collected were at least 10 feet from any structures if possible.

Site Pre-Characterization Sampling and Analysis

As the project progressed, the need to establish the level of effort anticipated for each upcoming site became much more apparent. The need to pre-characterize each of the remedial locations to establish reasonable estimates of non-hazardous waste requiring removal was made evident via an amendment to the CDAP. The site pre-characterization sampling and analysis efforts were applied to non-hazardous (stack emission) sites. The primary purpose of these efforts was to confirm or refute the potential contamination at each remedial location and to obtain an indication of the extent of contamination at sites with lead concentrations greater than 500 mg/kg. The most efficient and productive approaches to the pre-characterization sampling and analysis, which include the steps described in the following paragraphs, were ultimately developed for the residential lots.

Pre-characterization sampling and analysis at the residential lots included the establishment of two sample locations at each site. The two sample points were positioned at the center of the front and back yard of each location. One sample was then collected at the following depths from each sample location: 0 to 3 inches, 3 to 6 inches, and 6 to 12 inches.

The laboratory analysis of the samples followed the logic as below. The two samples representing the top 3-inch layer of each of the locations were analyzed for total lead and toxicity characteristic leaching procedure (TCLP) lead. The second and third set (representing 3 to 6 and 6 to 12 inch depths) were analyzed for total lead only.

This is depicted in Figure A-3 in Appendix A.

Pre-characterization of Additional Sites

Under authorization of USACE, OHM performed the pre-characterization sampling of additional sites over and above the original scope of services. The objective of this was to determine the potential presence of lead contamination with anticipation for the planning of remediation at these same sites. The technical approach for this task involved the same approaches as mentioned in the preceding paragraphs concerning pre-characterization.

2.6.2 CDAP Amendment/Adjustments

Development of the Sampling for Backfill Material

An amendment for the sampling and analysis of backfill was designed to show that incoming backfill material was clean to USEPA standards. This was done as a composite sample on every 1000 cubic yards of backfill and run for the following analysis:

- TCLP for Cd, Cr, Pb
- PAH-IEPA Levels
- Pesticides/PCB's
- TPH
- GRO
- DRO
- Total VOC's

2.7 TRANSPORTATION AND DISPOSAL

The transportation and disposal (T&D) of waste from the sites included the shipment of non-hazardous waste shipped to the Chain of Rocks facility/Milam facility. Garcia Trucking transported the special waste. The transportation of the waste was performed with tandem dump trucks.

2.7.1 Transportation of Waste

Each site was identified by an address, which was written on the manifest. The site was then assigned a 5-digit manifest document number at the time of shipment. This system ensured the trucks origin was documented.

The State of Illinois requires each special waste shipment be on an all Illinois manifest. This allowed each shipment of special waste to also be cross-referenced with the preprinted Illinois manifest document.

2.7.2 Disposal of Wastes

This project involved the removal and disposal of special non-hazardous industrial waste (non-hazardous waste) which was primarily removed from residential locations. The objective of the non-hazardous waste excavation efforts was to remove all material exhibiting concentration of total lead above

500 mg/kg, but less than 5 mg/l, when analyzed by TCLP.

Disposal characterization of waste was determined by analyzing composite samples, as directed in Section 2.6. Pre-characterization analysis was done at each site to verify depth of lead contamination. The characterization of certain waste as non-hazardous was confirmed at each site with the performance of TCLP lead analysis of composite samples.

The disposal facility subcontracted to provide non-hazardous waste disposal was the Chain of Rocks facility/Milam. OHM obtained the approved waste profile by providing analytical that was previously performed under the Rapid Response Contract.

3.0 TECHNICAL APPROACH

The stated objective of this project was to excavate and dispose of lead contaminated soil in yards of residential communities as per the Record of Decision between the USEPA, IEPA, and the potentially responsible parties (PRPs) for the Superfund site.

This section describes the general approach implemented to complete the work in the residential lots. The methods implemented to perform the work on this project fall into one category:

- Residential lots (Non-Hazardous)

The operational effort extended was supported by the technical information that was gained through implementation of the following:

- CDAP amendment/adjustment
- Transportation and disposal, Appendix A-2

3.1 PRE-CONSTRUCTION ACTIVITIES

The pre-construction activities performed during this project were predominantly associated with obtaining disposal permits; obtaining transportation permits; preparing and delivering notifications of work to the public; attending public meetings; and identifying utilities at each remedial location. Many of these pre-construction activities were performed on an on-going basis as the project proceeded from one remedial location to the next.

The permits for the disposal of non-hazardous waste were obtained prior to shipment of the waste.

Before work progressed from one remedial location to the next, the identification of utilities was coordinated from the command center by OHM's safety supervisor. The identification of the utilities was coordinated with Julie Corporation. OHM's safety supervisor would telephone Julie Corporation and notify the organization of OHM's intention to perform work at a given site. Julie Corporation would then issue a "dig number" to OHM and notify all utility companies listed to provide service for the area of concern. Typically, the utility companies would mark the utilities on the site within 48 hours of OHM's initial contact with Julie Corporation.

OHM's subcontractors who performed the transportation of waste and equipment at and through the cities of Madison, Venice, and Granite City, Illinois City obtained required transportation permits.

3.2 SAMPLING AND ANALYSIS

The sampling and analysis tasks involved the following items:

- Laboratory confirmation sampling and analysis
- Pre-characterization sampling and analysis
- Backfill sampling

As per the direction of USACE, material at the residential sites exhibiting concentrations of total lead greater than 500 mg/kg were removed and disposed.

3.2.1 Pre-Characterization Sampling and Analysis

As the project progressed, the need to establish the level of effort anticipated for each upcoming site became much more apparent. The need to pre-characterize each of the remedial locations for establishing reasonable estimates of non-hazardous waste requiring removal was made evident through incorporation into the CDAP. The site pre-characterization sampling and analysis efforts were applied to non-hazardous (stack emission) sites. The primary purpose of the pre-characterization sampling was to confirm presence of non-hazardous waste meeting the action level. The most effective and productive approaches to the pre-characterization sampling and analysis were ultimately developed for the residential lots.

3.2.2 Technical Approach to Stack Emission Lots

The technical approach to the stack emission lots differed from the residential battery casing cleanups in the respect no confirmation sampling was necessary. The reason for this was due to previous sampling results yielding a pre-determined depth per USEPA. Consequently, yards were excavated to this pre-determined depth. In addition, all waste was shipped out as special-direct to a landfill.

3.3 CHEMICAL DATA ACQUISITION PLAN AMENDMENTS/ADJUSTMENTS

3.3.1 Development of the Sampling for Backfill Material

An amendment for the sampling and analysis of backfill material was designed to show that incoming backfill material was clean to USEPA standards. This was done as composite samples on every 1000 cubic feet of backfill and run for the following analysis:

- TCLP for Cd, Cr, Pb
- PAH-IEPA Levels
- Pesticides/PCB's
- TPH
- GRO
- DRO
- Total VOC's

3.4 TRANSPORTATION AND DISPOSAL

The T & D of waste removed from the sites included the shipment of non-hazardous waste by Garcia Trucking to Chain of Rocks Landfill/ Milam in Granite City, IL.

3.3.1 Transportation of Waste

Each site was identified by an address, which was written on the manifest. The site was then assigned a 5-digit manifest document number at the time of shipment. This system ensured the truck origins were documented.

3.3.2 Disposal of Wastes

Disposal characterization of the waste was determined by analyzing composite samples, as described in Section 2.6. Verification of waste characterization was performed at each site through pre-characterization efforts. The characterization of certain waste as non-hazardous was confirmed at each site with the performance of total lead and TCLP lead analysis of composite samples.

The disposal facility subcontracted to provide non-hazardous waste disposal was Chain of Rocks/Milam in Granite City, IL. OHM obtained the approved waste profile by providing analytical that was previously done under Rapid Response Contract.

4.0 HEALTH AND SAFETY SUMMARY

4.1 PROJECT SUMMARY AND CONCLUSIONS

4.1.1 Summary

The following summarizes the health and safety aspects of this project:

- Task-specific hazard evaluations were performed each day at each work site prior to the start of work
- Air monitoring data was used during this project to verify appropriate personal protection was being used for site conditions. Personnel medical monitoring was performed prior to and at the end of the project to determine lead levels in the blood.
- Perimeter samples indicated total lead concentration below the action limit established in the LSSHP. Although results obtained are "after the fact," no personnel or citizens were at risk to exposure at any time.
- Personnel air sampling data indicated no detectable reading for total lead. There were no recorded cases of personnel overexposure to ambient lead levels.

4.1.2 Conclusions

Following completion of the project, the OHM Health and Safety Department made the following conclusions:

- The LSSHP was effectively implemented to address the health and safety hazards associated with each phase of site operations and to meet the requirements set forth in 29 CFR 1910.120.
- The existing LSSHP is appropriate for future phases of work at this site involving the same work activities.
- Future work should be performed in Level D PPE with appropriate air monitoring to verify the selection of PPE. An action level of 30mg/m³ should be used to warrant controls. Once monitoring shows consistent reading below the action level, the amount and frequency of air monitoring may be appropriately limited/reduced.
- Special attention should be paid to prevent any recordable accidents and near misses during the course of future work. Routine tasks should be reviewed and evaluated for potential hazards.

4.2 SITE SAFETY AND HEALTH PLAN EVALUATION

A LSSHP was issued before the start of this project to address the health and safety hazards

associated with each phase of site operations. The plan met the requirements of 29 CFR 1910.120. The phases of work addressed in the LSSHPP include the following:

- Mobilization
- Installation of perimeter fence
- Soil sampling
- Excavation of contaminated soil
- Load-out of contaminated soil
- Backfill of excavation
- Restoration of disturbed areas
- Decontamination and demobilization

4.2.1 Provisions

Once on site, waste materials were designated to be directly loaded into dump trucks.

Provisions were made to address heavy equipment, excavation and other physical hazards. Hazards associated with vehicle and pedestrian traffic in work areas and roadways were controlled by the use of warning signs, Men at Work signs, and road guards to direct traffic.

4.2.2 Personal Protective Equipment

PPE provisions were made to minimize exposure to lead contamination for personnel on site. Level D PPE included the following:

- Hard hat
- Safety glasses
- Steel-toed leather safety shoes/boots
- Poly tyvek coveralls
- Nylon booties (under) and Robar/Tingley boots (outer)
- Inner sample gloves, outer cloth or leather gloves

An action level of 15.0 mg/m³ of airborne lead, as determined by integrated sampling was set by USACE to upgrade the level of PPE to Level C (including use of an air-purifying respirator.) Air monitoring was performed for the duration of remedial activities to ensure proper PPE use.

4.3 SITE SAFETY

4.3.1 Accidents

Employee safety was OHM's first priority. After performing more than 9,600 man hours on this project, OHM personnel suffered no OSHA-recordable accidents or injuries.

4.3.2 Preventative Measures

A number of measures were taken on site to prevent accidents and injuries. Daily safety meetings were held to discuss: hazards associated with upcoming work tasks; the use of specific tools and equipment; and other chemical, physical, and environmental hazards associated with site work. Task-specific hazard evaluations were performed each day at the work sites prior to the start of work.

Controls were used to eliminate the hazards associated with vehicle and pedestrian traffic near the work locations. Warning signs were posted and guards were used to direct traffic.

A heat stress prevention program was also instituted on site. Personnel heat stress monitoring was performed to prevent heat-related illnesses during work in high ambient temperatures. Site workers' pulses, body temperatures, and blood pressures were taken before and after each break. Work-rest schedules were determined by the results of this monitoring in accordance with the LSSHP heat stress monitoring criteria.

Specific work/rest regimens were established at the start of every workday based on the specific work conditions for that day (temperatures, time of day, amount of sun or shade, etc.) Breaks were taken in shady areas as designated throughout the work shift. Personnel removed PPE and were given cool liquids to drink (e.g., juice, and water). Visual observation by a designated safety official was used to identify individuals exhibiting symptoms of heat-related illness and to take the necessary actions.

4.4 EXPOSURE MONITORING

4.4.1 Methodology

Air monitoring was performed to determine the ambient levels of total suspended particulates generated during excavation and to determine total ambient lead exposure for site personnel and perimeter emissions. At the start of each workday, wind direction was used to determine the placement of sampling instruments on site.

Personnel and perimeter samples were taken to determine the levels of total lead in the air of the personal breathing zone and at the site perimeter. Lead samples were collected and analyzed using NIOSH Method 7300 and battery-operated air sampling pumps (Gilliam or equivalent) fitted with 37-millimeter (mm) mixed cellulose ester (MCE) filters (0.8-micron pore diameter).

4.4.2 Perimeter Sampling

Three perimeter samples were taken daily over the course of the work shift. One sample was taken upwind of site operations and two were taken downwind. Perimeter samples were taken above ground levels (approximately 4 to 5 feet in height) to characterize the breathing zone and to prevent contamination due to foot traffic. The pump flowrate was calibrated and set at approximately 20 liters per minute for the duration of the task (about 8 hours.)

Samples were assigned identification numbers based on an established code. The analytical laboratory used was Environmetrics, 11401 Moog Drive, St. Louis, Missouri. Standard turnaround time for

sample results was 24 to 48 hours by facsimile; original data was then returned by mail.

4.4.3 Personnel Sampling

Personnel air samples for lead were taken for a respective number of employees performing intrusive activities within the exclusion zone (one employee from each job category; at least two employees per day per site). The samples were taken in the person's breathing zone for the duration of the day's shift. Samples were collected at the end of the workday and sent to the analytical laboratory for analysis of total lead. A blank sample was included in shipment.

4.4.4 Medical Monitoring

Personnel blood lead levels were determined prior to and after the completion of work for this project.

5.0 QUANTITY SUMMARY TABLE

Quantities of material were tracked for each lot or site remediated. Table 5.1 presents a summary of these totals.

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QUANTITY SUMMARIES

Site Address	Special cu yd	Sod sq yd	CA-6 ton	CA-7 ton	Topsoil cu yd	Backfill loads
2012 Cleveland	67.09	570	27.80		21.73	2
2020 Cleveland	77.79	300			21.65	8
2250 Cleveland	56.98	420			32.69	
2254 Cleveland	35.93	180			11.62	5
2029/31 Delmar	8.08	300	41.93	13.56	10.38	6
2108 Delmar	11.69		14.66			
2110 Delmar	41.12		57.69	14.42		
2112/14 Delmar	40.75	240			21.27	
2124 Delmar	53.85	180	73.31		11.65	2
2032 Edison	57.38	180	32.67		33.73	
2125 1/2 Edison	30.58	120	14.07	28.03	22.62	
2208 Edison	54.99	360			32.77	
2212/14 Edison	66.75	120	69.16	9.54	7.81	3
801/03 Grand	127.90	960	15.79		30.88	14
805 Grand	18.48	120			10.58	4
823 Grand	342.12	510	158.75	28.09	52.92	25
2039 State	42.03	420			10.58	2
2110 State	320.08	510	30.51	14.93	33.69	52
2150 State	25.03	180			29.73	
2152 State	55.15	240	30.95	29.24		3
2205/07 State	116.70	780	52.45	43.26	53.46	6
2210 State	63.80	600			33.08	8
2211 State	99.90	546	15.40	14.55	131.58	7
2215 State	69.18	600	27.43	26.07	22.23	6
Totals:	1883.37	8436	662.57	221.69	636.65	153

6.0 VERIFICATION ANALYTICAL SUMMARY TABLE

6.1 Stack Emission Sites

Stack emission sites were not sampled for verification. This was due to the fact that a predetermined depth for excavation was given to OHM by USACE for each stack emission site.

Stack emission sites are sampled for pre-characterization analysis. Depth's from Woodward/Clyde Sampling are being reviewed by the USEPA and may result in re-sampling.

7.0 PHOTO REPRESENTATION

Photographs and videocassettes documented all sites in all phases of the Granite City project. Each property was documented with before, during, and after photographs and videos. The following sections are representative of the various types of work performed during Phases 1, 2, and 3. Not all properties - only selected representative samples - are presented in this final report, in order to minimize the volume of paper.

2012 Cleveland (Page 7-2)

- Top picture - Lot before excavation
- Middle picture - Lot during excavation
- Bottom picture - Lot after restoration/sod

2112/14 Delmar (Page 7-3)

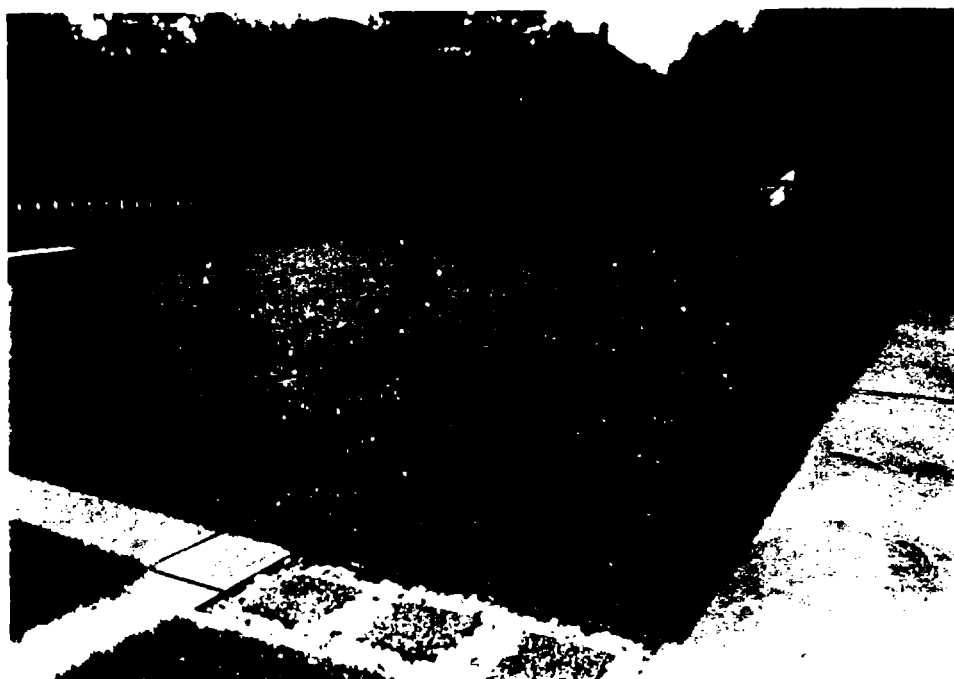
- Top picture - Lot before excavation
- Middle picture - Lot during excavation
- Bottom picture - Lot after restoration/sod

2208 Edison (Page 7-4)

- Top picture - Lot before excavation
- Middle picture - Lot during excavation
- Bottom picture - Lot after restoration/sod





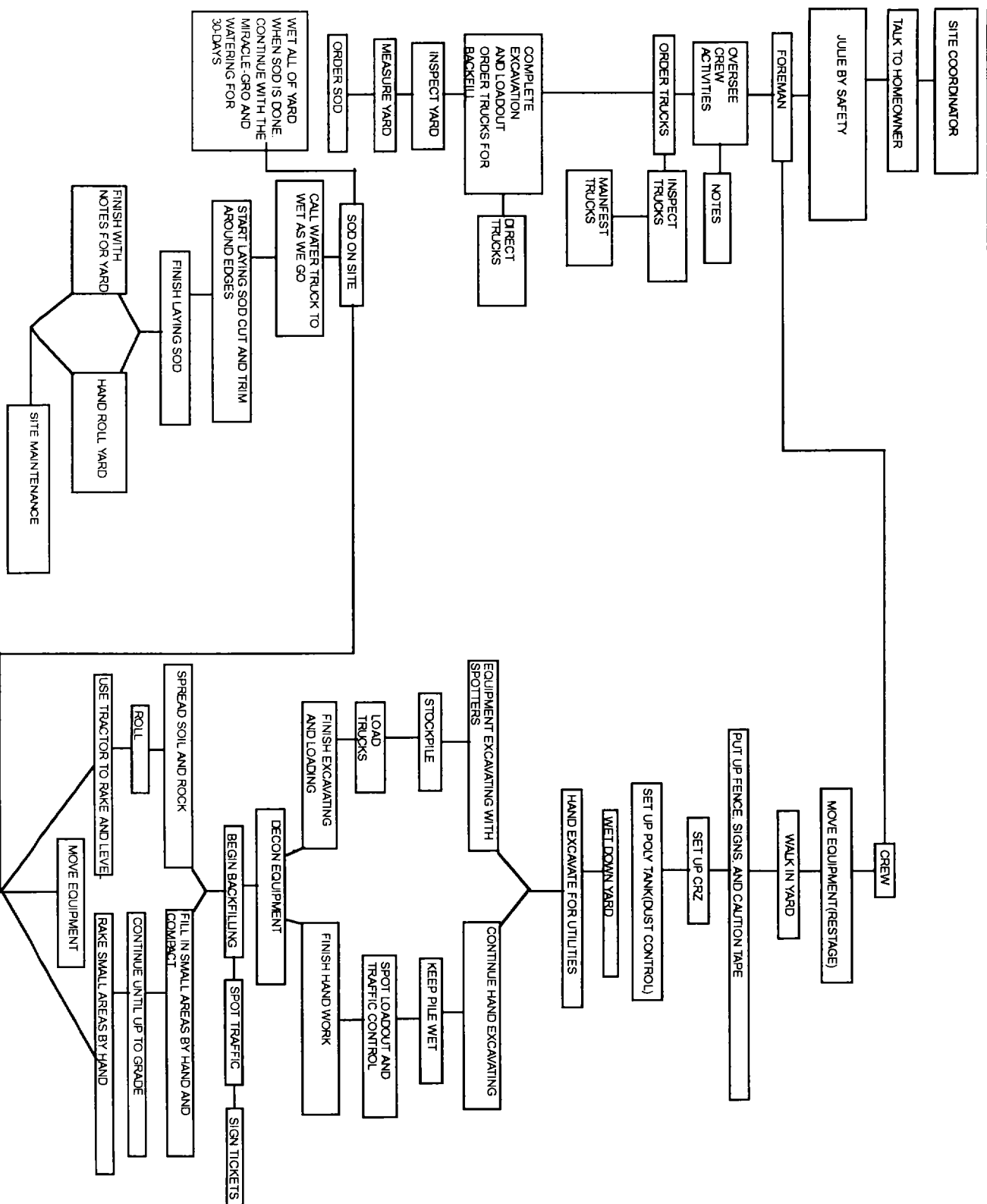


APPENDIX A

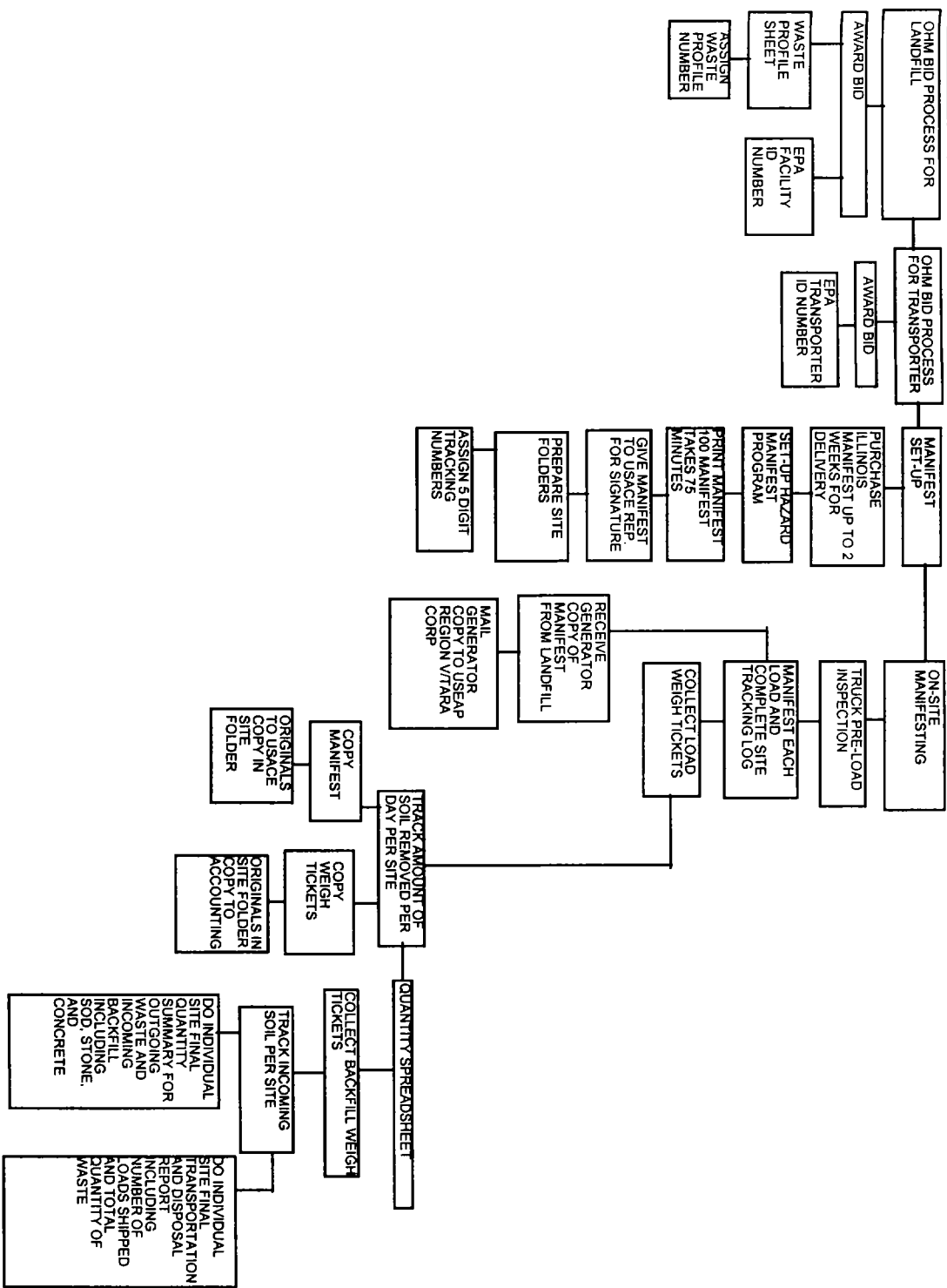
FLOW CHARTS

<i>APPENDIX A-1</i>	<i>OPERATIONS FLOW CHART</i>
<i>APPENDIX A-2</i>	<i>TECHNICAL EFFORT FOR TRANSPORTATION AND DISPOSAL</i>
<i>APPENDIX A-3</i>	<i>TECHNICAL EFFORT FOR SAMPLING</i>
<i>APPENDIX A-4</i>	<i>SITE COORDINATOR FLOW CHART</i>

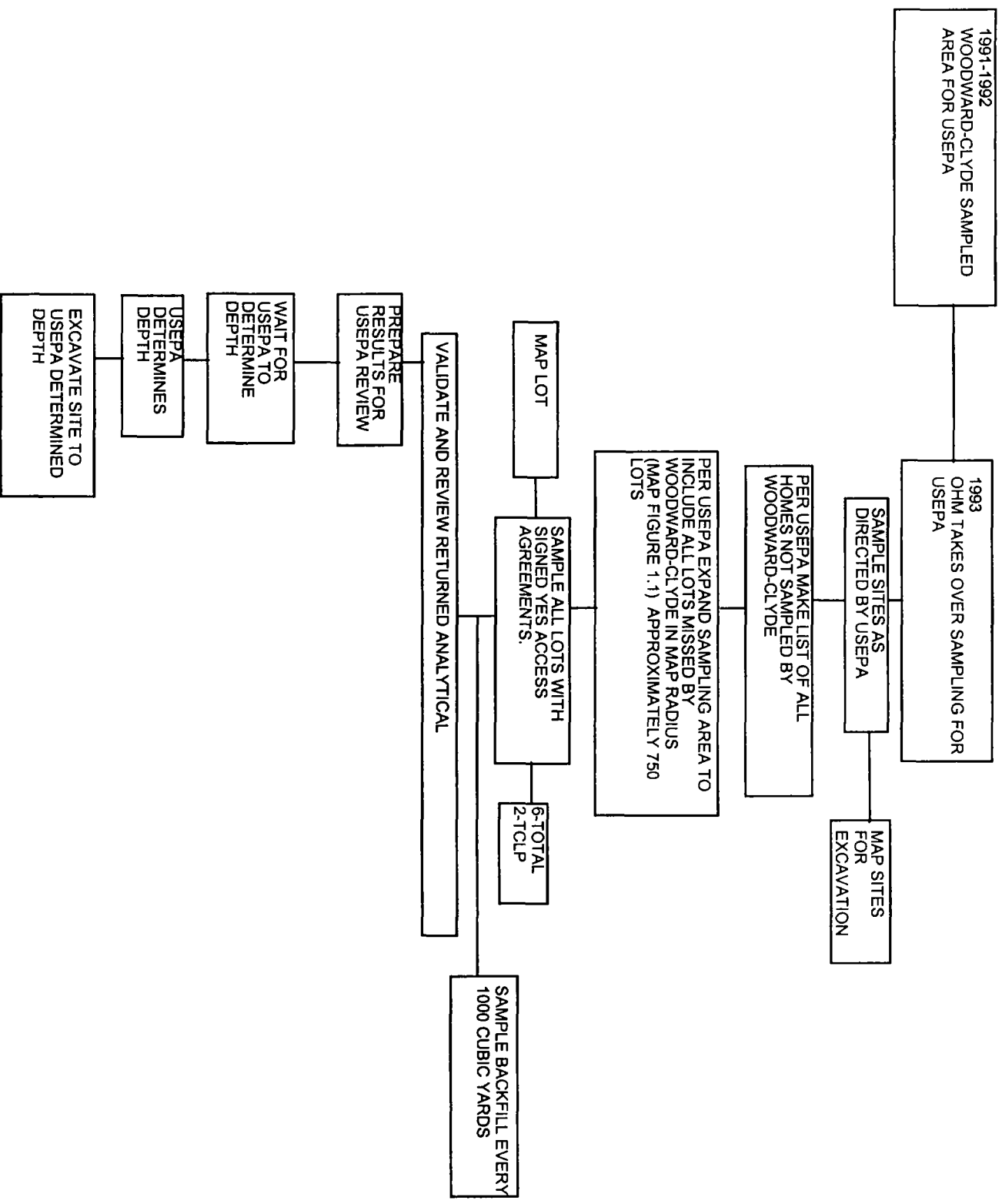
OPERATIONS FLOW CHART



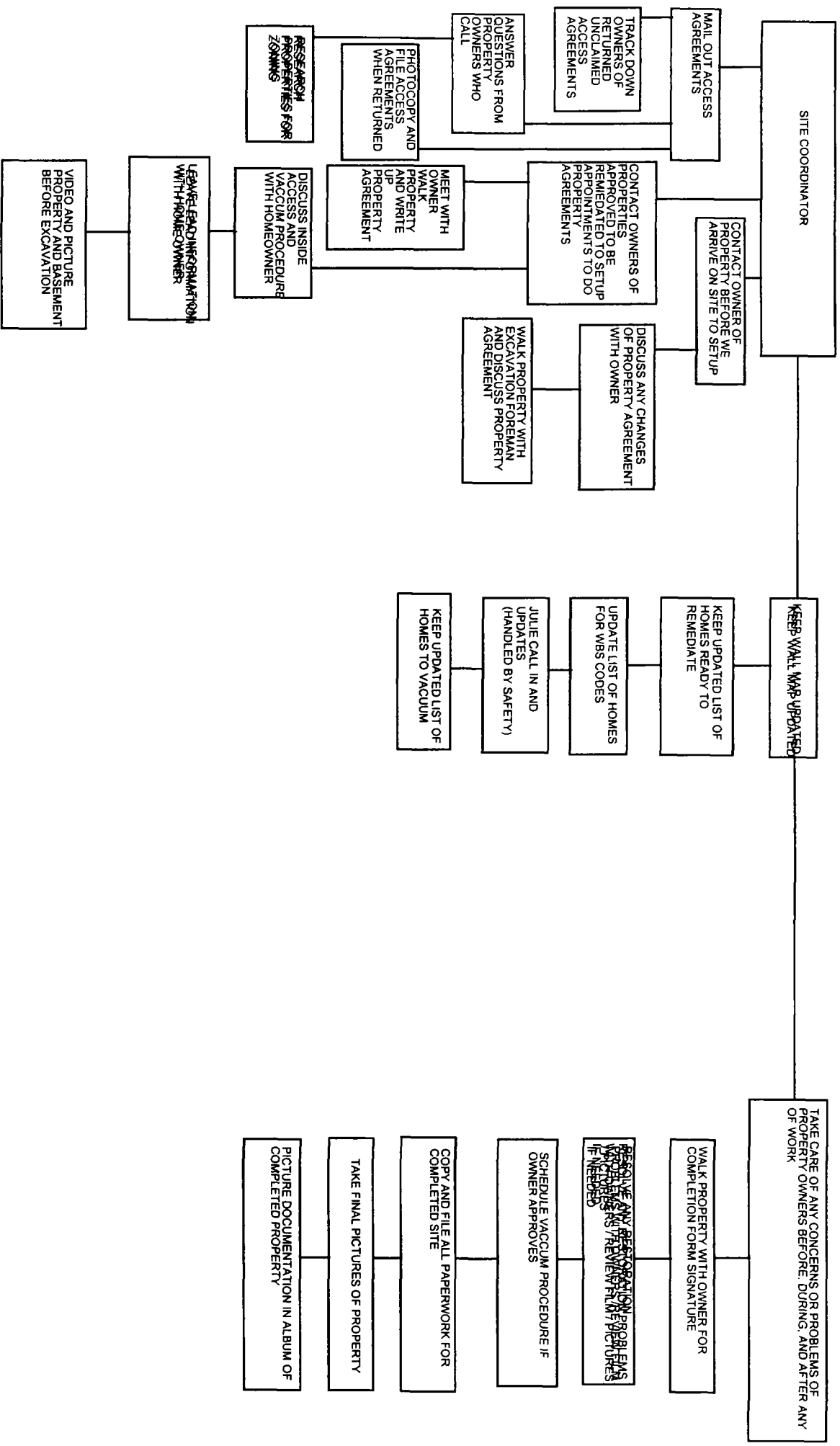
TECHNICAL EFFORT FOR TRANSPORTATION AND DISPOSAL



TECHNICAL EFFORT FOR SAMPLING



SITE COORDINATOR FLOW CHART



APPENDIX B - REMEDIAL LOCATION WORK DESCRIPTIONS

2012 Cleveland
2020 Cleveland
2250 Cleveland
2254 Cleveland
2029/31 Delmar
2108 Delmar
2110 Delmar
2112/14 Delmar
2124 Delmar
2032 Edison
2125 ½ Edison
2208 Edison
2212/14 Edison
801/03 Grand
805 Grand
823 Grand
2039 State
2110 State
2150 State
2152 State
2205/07 State
2210 State
2211 State
2215 State

2012 Cleveland

Action Date: 6/3/98

Loadout: 6/15/98

Restoration Begins: 6/15/98

Restoration Completed: 6/19/98

*Easements were not sampled for verification due to the fact that a pre-determined depth for excavation was given to OHM by USACE.

*An excavation depth of 6 inches was established by USACE prior to work commencing.

*The excavation of special waste yielded a total of 67.09 cubic yards, which was shipped to WMI-Milam for disposal.

*Equipment utilized during excavation:

*TL-26

*TCM

*X331

*17-KW

*Subcontractors:

*WMI-landfill

*B. Garcia-trucking

*Grantham-trucking

OHM CORPORATION
PROJECT 20366
GRANITE CITY, IL

QUANTITY SUMMARY FOR 2012 Cleveland

SPECIAL WASTE (TONS)	BACKFILL (LOADS)	TOPSOIL (TONS)	CA-6 (TONS)	CA-7 (TONS)	SAND (TONS)	SOD CU.YDS.	CONCRETE	OTHER
87.22	2	28.25	27.80			570		

**Sampling Analysis
Project #20366**

0 - 3" Front and Back

	A	A	A
Street/Number	PPM	PPM	PPM
Address	No.	No.	No.

2012 Cleveland

329 898
505 1490

3-6" Front and Back

B	B	B
PPM	PPM	PPM
No.	No.	No.

170 1930
340 598

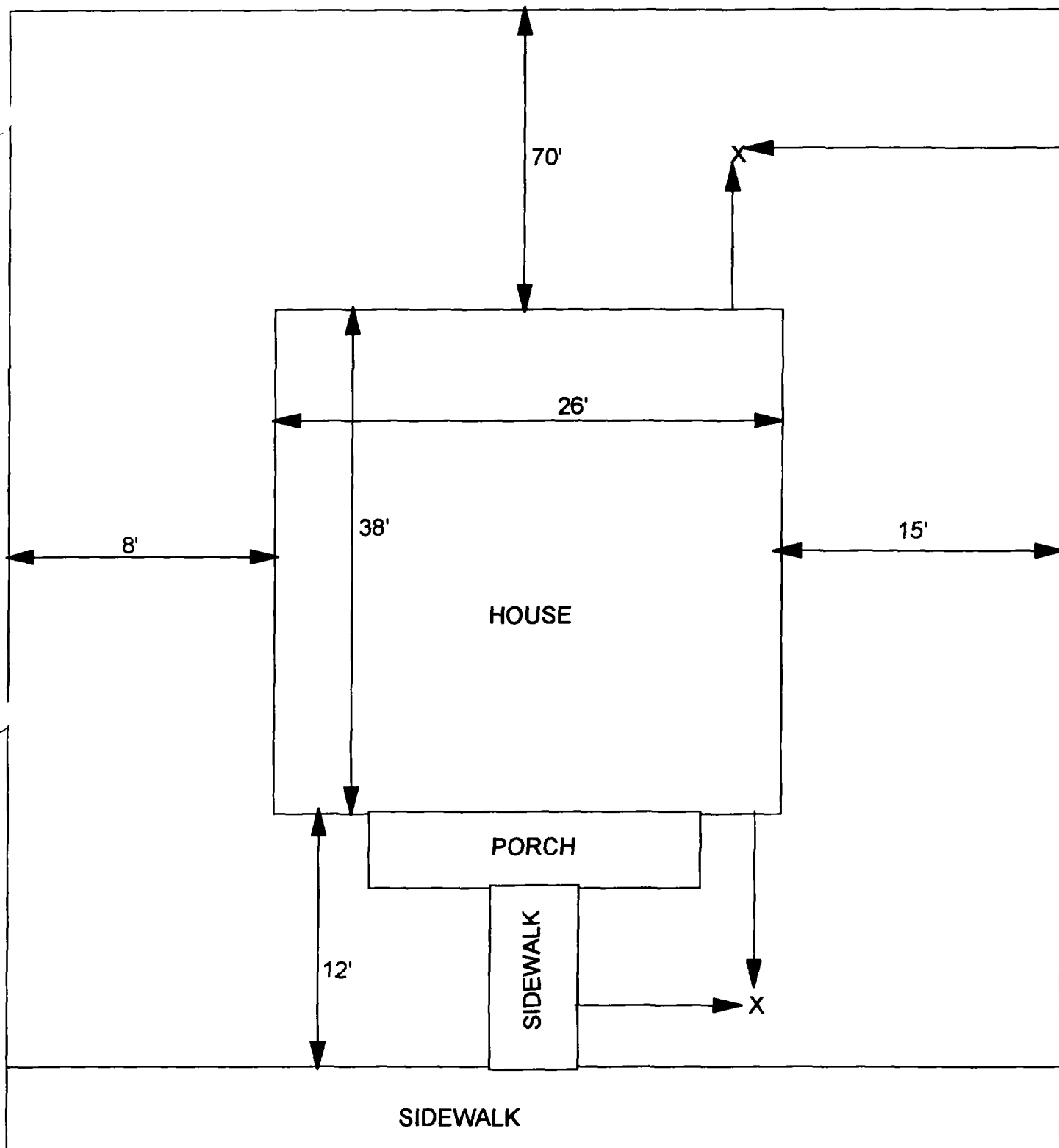
6-12" Front and Back

C	C	C
PPM	PPM	PPM
No.	No.	No.

62 11

Depth
Excav.
(inch)

6



X - SAMPLE POINT

2012 CLEVELAND
49' X 120'

OHM 
Corporation
Findlay, Ohio

Drawn By: EDJ	Checked By:
Date: 10/14/98	Approved By:
Scale: NTS	Drawing No:

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2020 Cleveland

Action Date: 6/3/98

Loadout: 6/13/98

Restoration Begins: 6/13/98

Restoration Completed: 6/19/98

*Easements were not sampled for verification due to the fact that a pre-determined depth for excavation was given to OHM by USACE.

*An excavation depth of 6 inches was established by USACE prior to work commencing.

*The excavation of special waste yielded a total of 77.79 cubic yards, which was shipped to WMI-Milam for disposal.

*Equipment utilized during excavation:

*TL-26

*TCM

*X331

*17-KW

*Subcontractors:

*WMI-landfill

*B. Garcia-trucking

*Grantham-trucking

OHM CORPORATION
PROJECT 20366
GRANITE CITY, IL

QUANTITY SUMMARY FOR 2020 Cleveland

SPECIAL WASTE (TONS)	BACKFILL (LOADS)	TOPSOIL (TONS)	CA-6 (TONS)	CA-7 (TONS)	SAND (TONS)	SOD CU.YDS.	CONCRETE	OTHER
101.13	8	28.15				300		

Sampling Analysis
Project #20366

0 - 3" Front and Back			
	A	A	A
Street/Number	PPM	PPM	PPM
Address	No.	No.	No.

3-6" Front and Back			
B	B	B	B
PPM	PPM	PPM	PPM
No.	No.	No.	No.

6-12" Front and Back			
C	C	C	C
PPM	PPM	PPM	PPM
No.	No.	No.	No.

Depth
Excav.
(inch)

2020 Cleveland

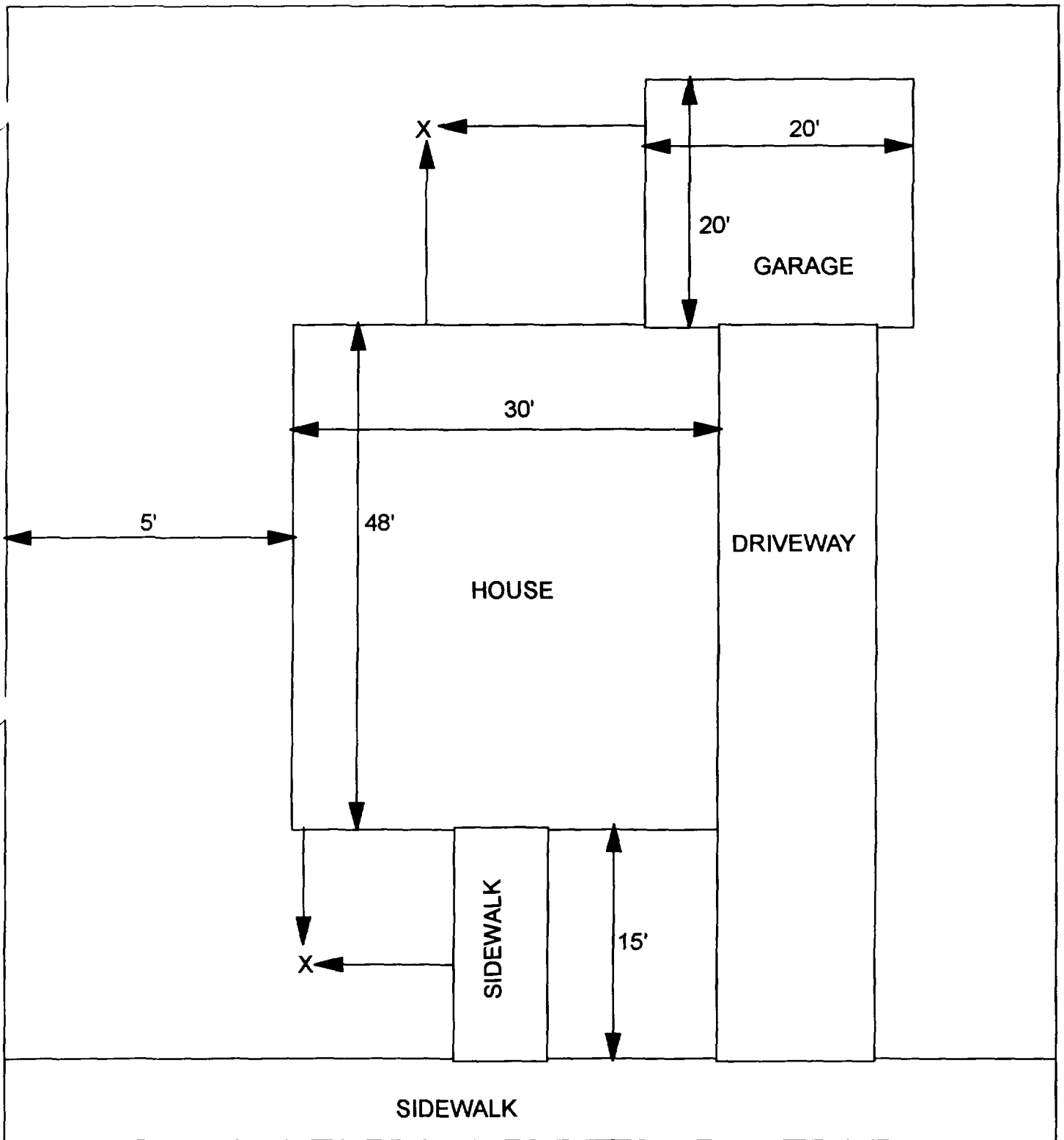
982

678

541 629

234 167

6



X - SAMPLE POINT

2020 CLEVELAND
55' X 83'

OHM 
Corporation
Findlay, Ohio

Drawn By: **EDJ**

Checked By:

Date: **10/14/98**

Approved By:

Scale: **NTS**

Drawing No:

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2250 Cleveland

Action Date: 5/26/98

Loadout: 5/28/98

Restoration Begins: 5/28/98

Restoration Completed: 6/2/98

*Easements were not sampled for verification due to the fact that a pre-determined depth for excavation was given to OHM by USACE.

*An excavation depth of 3 inches was established by USACE prior to work commencing.

*The excavation of special waste yielded a total of 56.98 cubic yards, which was shipped to WMI-Milam for disposal.

*Equipment utilized during excavation:

*TL-26

*TCM

*X331

*17-KW

*Subcontractors:

*WMI-landfill

*B. Garcia-trucking

*Grantham-trucking

OHM CORPORATION
PROJECT 20366
GRANITE CITY, IL

QUANTITY SUMMARY FOR 2250 Cleveland

SPECIAL WASTE (TONS)	BACKFILL (LOADS)	TOPSOIL (TONS)	CA-6 (TONS)	CA-7 (TONS)	SAND (TONS)	SOD CU.YDS.	CONCRETE	OTHER
74.07		42.50				420		

**Sampling Analysis
Project #20366**

Street/Number Address	0 - 3" Front and Back			
	A	A	A	A
	PPM	PPM	PPM	PPM
	No.	No.	No.	No.

2250 Cleveland 509 358
247 1476

	3-6" Front and Back			
	B	B	B	B
	PPM	PPM	PPM	PPM
	No.	No.	No.	No.

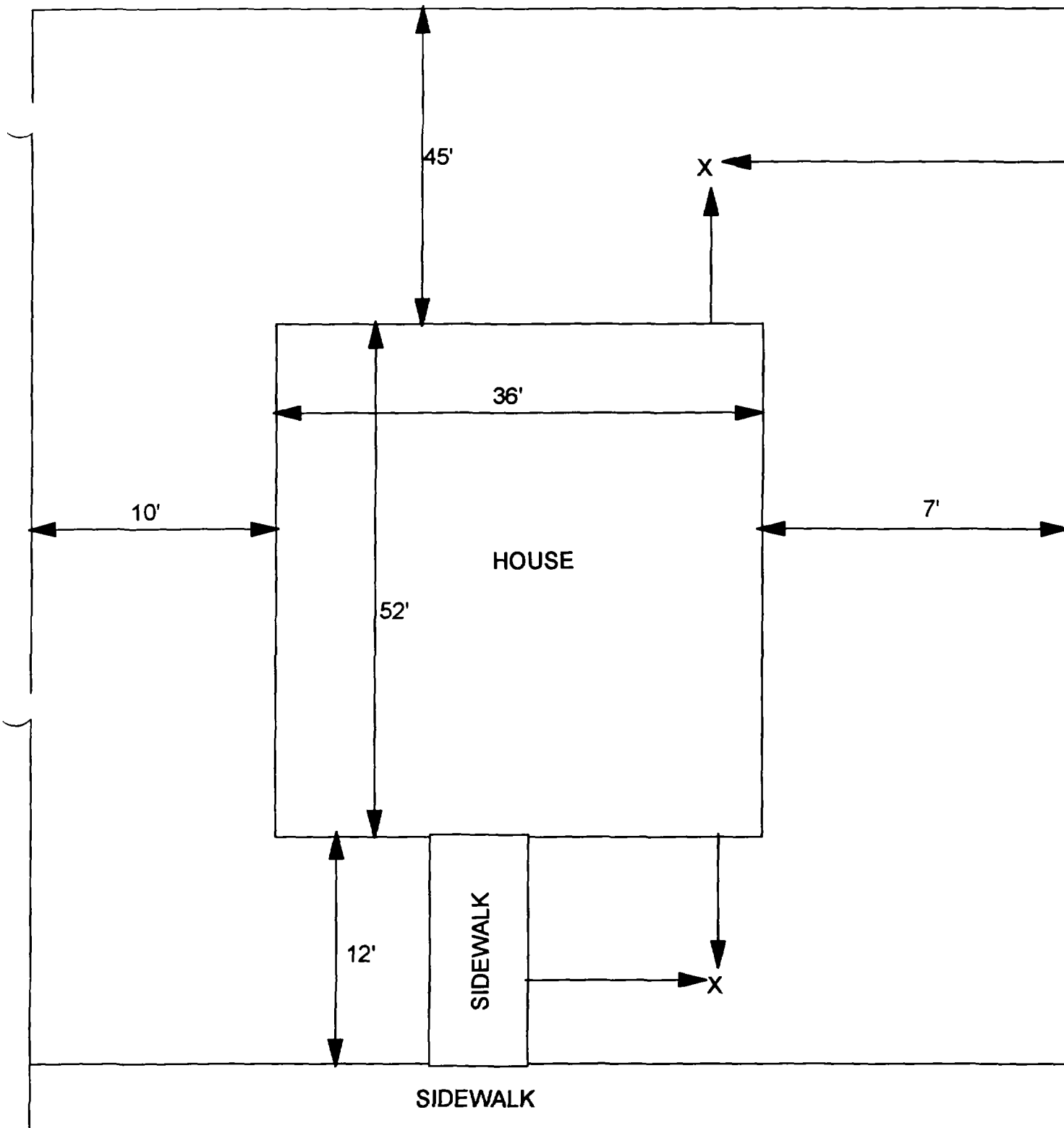
336 381

	6-12" Front and Back			
	C	C	C	C
	PPM	PPM	PPM	PPM
	No.	No.	No.	No.

172 264

Depth
Excav.
(inch)

3



X - SAMPLE POINT

2250 CLEVELAND
52' X 109'

OHM
Corporation
Findlay, Ohio

Drawn By: **EDJ**

Checked By:

Date: **10/14/98**

Approved By:

Scale: **NTS**

Drawing No:

1

2

3

2254 Cleveland

Action Date: 5/28/98

Loadout: 5/29/98

Restoration Begins: 5/29/98

Restoration Completed: 6/3/98

*Easements were not sampled for verification due to the fact that a pre-determined depth for excavation was given to OHM by USACE.

*An excavation depth of 6 inches was established by USACE prior to work commencing.

*The excavation of special waste yielded a total of 35.93 cubic yards, which was shipped to WMI-Milam for disposal.

*Equipment utilized during excavation:

*TL-26

*TCM

*X331

*17-KW

*Subcontractors:

*WMI-landfill

*B. Garcia-trucking

*Grantham-trucking

OHM CORPORATION
PROJECT 20366
GRANITE CITY, IL

QUANTITY SUMMARY FOR 2254 Cleveland

SPECIAL WASTE (TONS)	BACKFILL (LOADS)	TOPSOIL (TONS)	CA-6 (TONS)	CA-7 (TONS)	SAND (TONS)	SOD CU.YDS.	CONCRETE	OTHER
46.71	5	15.11				180		

Sampling Analysis
Project #20366

Street/Number Address	0 - 3" Front and Back				3-6" Front and Back				6-12" Front and Back				Depth	
	A	A	A	A	B	B	B	B	C	C	C	C	Excav.	(inch)
	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM		

2254 Cleveland

381
767

656

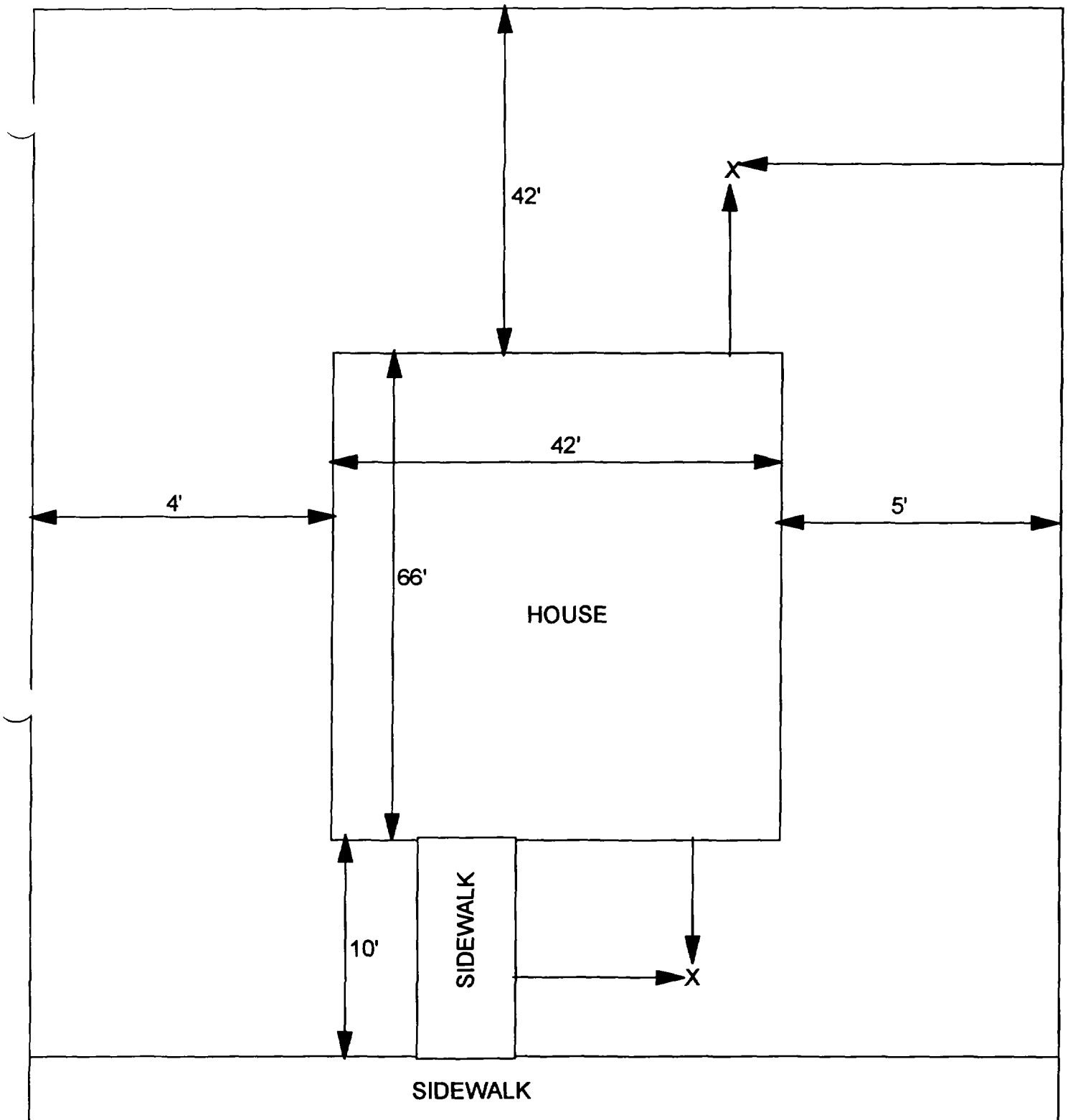
226
695
430

31
362

192
438

74

6



X - SAMPLE POINT

2254 CLEVELAND
51' X 118'

OHM 
Corporation
Findlay, Ohio

Drawn By: **EDJ**

Checked By:

Date:
10/14/98

Approved By:

Scale: **NTS**

Drawing No:

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2029/31 Delmar

Action Date: 6/3/98

Loadout: 6/15/98

Restoration Begins: 6/15/98

Restoration Completed: 6/19/98

*Easements were not sampled for verification due to the fact that a pre-determined depth for excavation was given to OHM by USACE.

*An excavation depth of 6 inches was established by USACE prior to work commencing.

*The excavation of special waste yielded a total of 77.32 cubic yards, which was shipped to WMI-Milam for disposal.

*Equipment utilized during excavation:

*TL-26

*TCM

*X331

*17-KW

*Subcontractors:

*WMI-landfill

*B. Garcia-trucking

*Grantham-trucking

OHM CORPORATION
PROJECT 20366
GRANITE CITY, IL

QUANTITY SUMMARY FOR 2029/31 Delmar

SPECIAL WASTE (TONS)	BACKFILL (LOADS)	TOPSOIL (TONS)	CA-6 (TONS)	CA-7 (TONS)	SAND (TONS)	SOD CU.YDS.	CONCRETE	OTHER
10.50	6	13.49	41.93	13.56		300		

**Sampling Analysis
Project #20366**

0 - 3" Front and Back

	A		A	
Street/Number	PPM	No.	PPM	No.
Address	No.	No.	No.	No.

2029/31 Delmar

966 666

3-6" Front and Back

B		B	
PPM	No.	PPM	No.
No.	No.	No.	No.

1062 414

6-12" Front and Back

C		C	
PPM	No.	PPM	No.
No.	No.	No.	No.

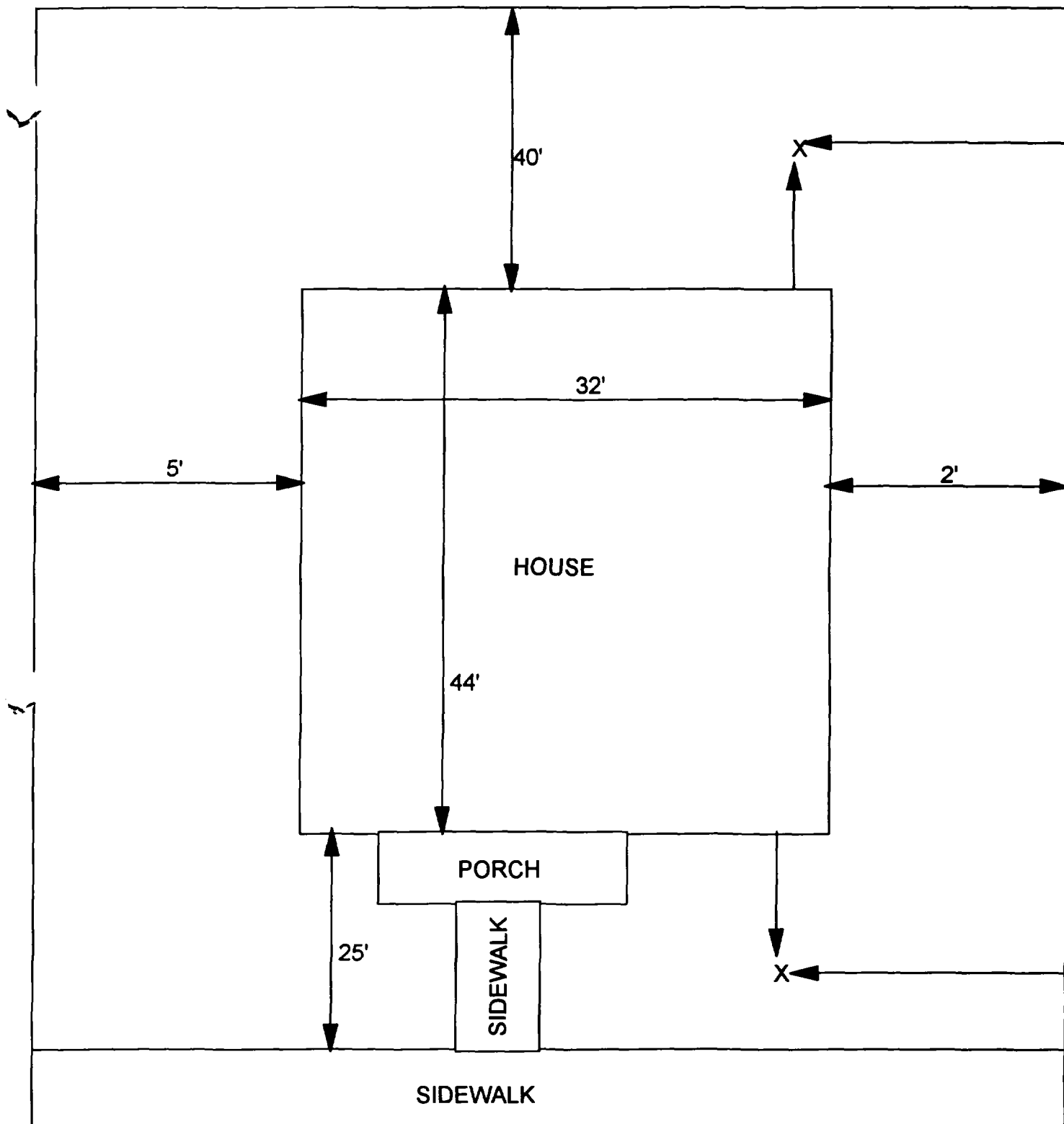
1352 148

205 64

228 137

Depth
Excav.
(inch)

6



X - SAMPLE POINT

2029/31 DELMAR
39' X 109'

OHM 
Corporation
Findley, Ohio

Drawn By: **EDJ**

Checked By:

Date: **10/14/98**

Approved By:

Scale: **NTS**

Drawing No:

1

2

3

2108 Delmar

Action Date: 5/26/98

Loadout: 5/27/98

Restoration Begins: 5/27/98

Restoration Completed: 5/29/98

*Easements were not sampled for verification due to the fact that a pre-determined depth for excavation was given to OHM by USACE.

*An excavation depth of 6 inches was established by USACE prior to work commencing.

*The excavation of special waste yielded a total of 67.09 cubic yards, which was shipped to WMI-Milam for disposal.

*Equipment utilized during excavation:

*TL-26

*TCM

*X331

*17-KW

*Subcontractors:

*WMI-landfill

*B. Garcia-trucking

*Grantham-trucking

OHM CORPORATION
PROJECT 20366
GRANITE CITY, IL

QUANTITY SUMMARY FOR

2108 Delmar

SPECIAL WASTE (TONS)	BACKFILL (LOADS)	TOPSOIL (TONS)	CA-6 (TONS)	CA-7 (TONS)	SAND (TONS)	SOD CU.YDS.	CONCRETE	OTHER
15.20			14.66					

**Sampling Analysis
Project #20366**

0 - 3" Front and Back			
Street/Number Address	A	A	A
	PPM	PPM	PPM
	No.	No.	No.

3-6" Front and Back			
Street/Number Address	B	B	B
	PPM	PPM	PPM
	No.	No.	No.

6-12" Front and Back			
Street/Number Address	C	C	C
	PPM	PPM	PPM
	No.	No.	No.

Depth Excav. (inch)

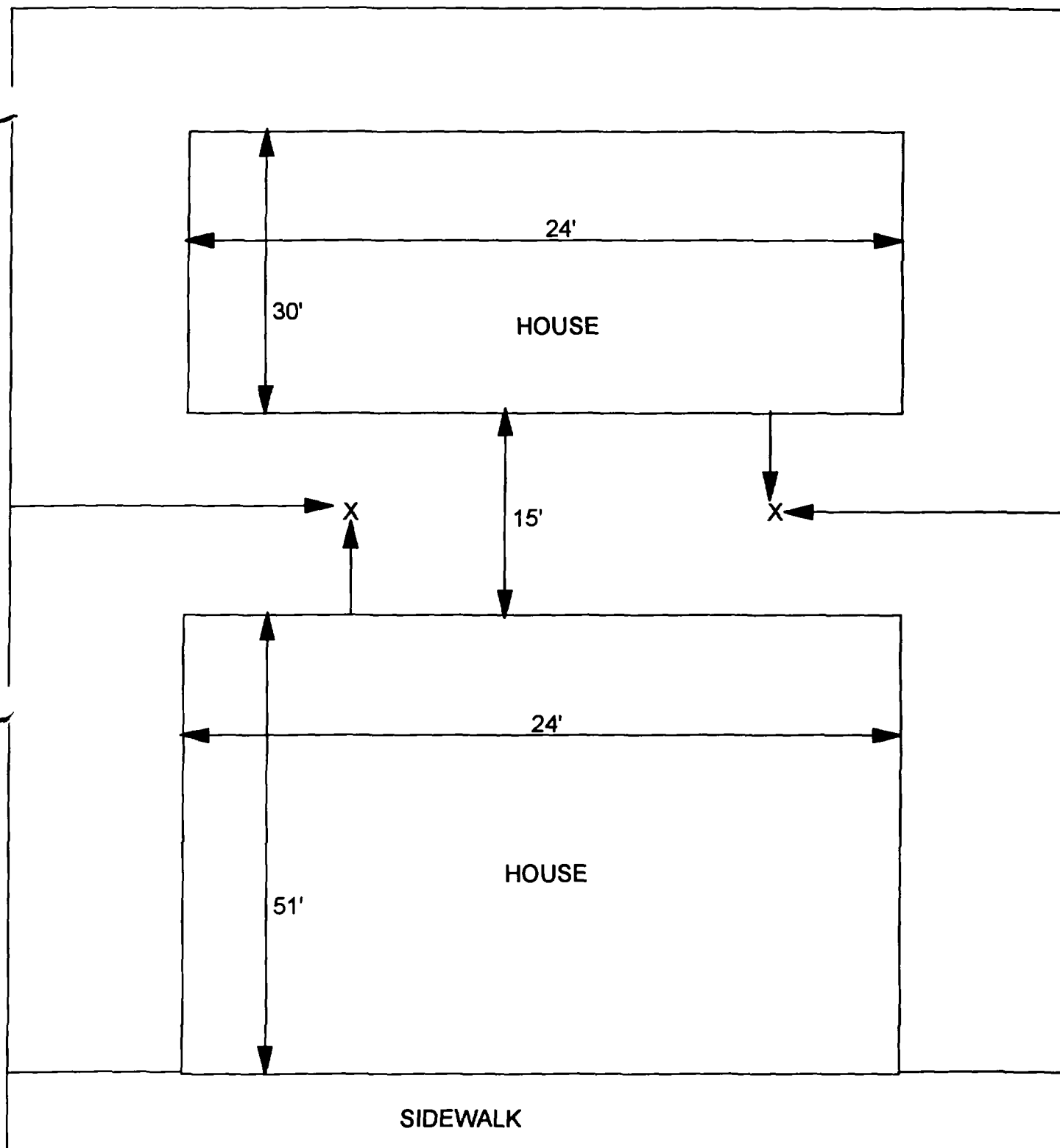
2108 Delmar

1598

1235

1641

12



X - SAMPLE POINT

2108 DELMAR
24' X 95'

OHM 
Corporation
Findlay, Ohio

Drawn By: **EDJ**

Checked By:

Date:
10/14/98

Approved By:

Scale: **NTS**

Drawing No:

1

2

3

2110 Delmar

Action Date: 5/26/98

Loadout: 5/27/98

Restoration Begins: 5/27/98

Restoration Completed: 5/29/98

*Easements were not sampled for verification due to the fact that a pre-determined depth for excavation was given to OHM by USACE.

*An excavation depth of 12 inches was established by USACE prior to work commencing.

*The excavation of special waste yielded a total of 41.12 cubic yards, which was shipped to WMI-Milam for disposal.

*Equipment utilized during excavation:

*TL-26

*TCM

*X331

*17-KW

*Subcontractors:

*WMI-landfill

*B. Garcia-trucking

*Grantham-trucking

OHM CORPORATION
PROJECT 20366
GRANITE CITY, IL

QUANTITY SUMMARY FOR

2110 Delmar

SPECIAL WASTE (TONS)	BACKFILL (LOADS)	TOPSOIL (TONS)	CA-6 (TONS)	CA-7 (TONS)	SAND (TONS)	SOD CU.YDS.	CONCRETE	OTHER
53.46			57.69	14.42				

**Sampling Analysis
Project #20366**

	0 - 3" Front and Back			
	A	A	A	A
	PPM	PPM	PPM	PPM
Street/Number Address	No.	No.	No.	No.

2110 Delmar

780

	3-6" Front and Back			
	B	B	B	B
	PPM	PPM	PPM	PPM
No.	No.	No.	No.	No.

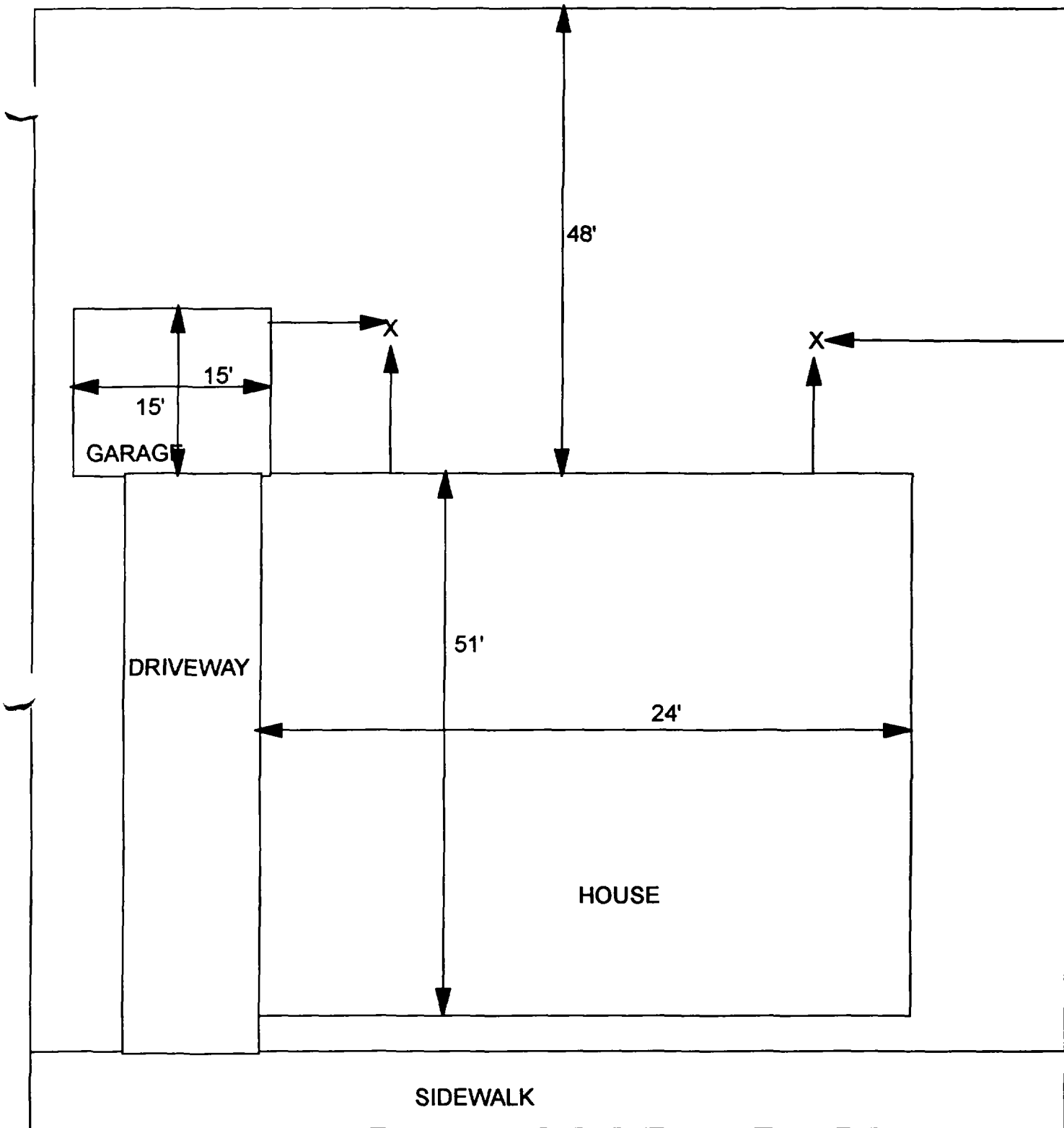
850

	6-12" Front and Back			
	C	C	C	C
	PPM	PPM	PPM	PPM
No.	No.	No.	No.	No.

730

Depth
Excav.
(inch)

12



X - SAMPLE POINT

2110 DELMAR
39' X 99'

OHM 
Corporation
Findlay, Ohio

Drawn By: **EDJ**

Checked By:

Date: **10/14/98**

Approved By:

Scale: **NTS**

Drawing No:

1

2

3

Action Date: 6/1/98

Loadout: 6/1/98

Restoration Begins: 6/2/98

Restoration Completed: 6/2/98

*Easements were not sampled for verification due to the fact that a pre-determined depth for excavation was given to OHM by USACE.

*An excavation depth of 12 inches was established by USACE prior to work commencing.

*The excavation of special waste yielded a total of 40.75 cubic yards, which was shipped to WMI-Milam for disposal.

*Equipment utilized during excavation:

*TL-26

*TCM

*X331

*17-KW

*Subcontractors:

*WMI-landfill

*B. Garcia-trucking

*Grantham-trucking

OHM CORPORATION
PROJECT 20366
GRANITE CITY, IL

QUANTITY SUMMARY FOR 2112/14 Delmar

SPECIAL WASTE (TONS)	BACKFILL (LOADS)	TOPSOIL (TONS)	CA-6 (TONS)	CA-7 (TONS)	SAND (TONS)	SOD CU.YDS.	CONCRETE	OTHER
52.98		27.65				240		

**Sampling Analysis
Project #20366**

0 - 3" Front and Back			
Street/Number Address	A	A	A
	PPM	PPM	PPM
	No.	No.	No.

3-6" Front and Back			
Street/Number Address	B	B	B
	PPM	PPM	PPM
	No.	No.	No.

6-12" Front and Back			
Street/Number Address	C	C	C
	PPM	PPM	PPM
	No.	No.	No.

Depth Excav. (inch)

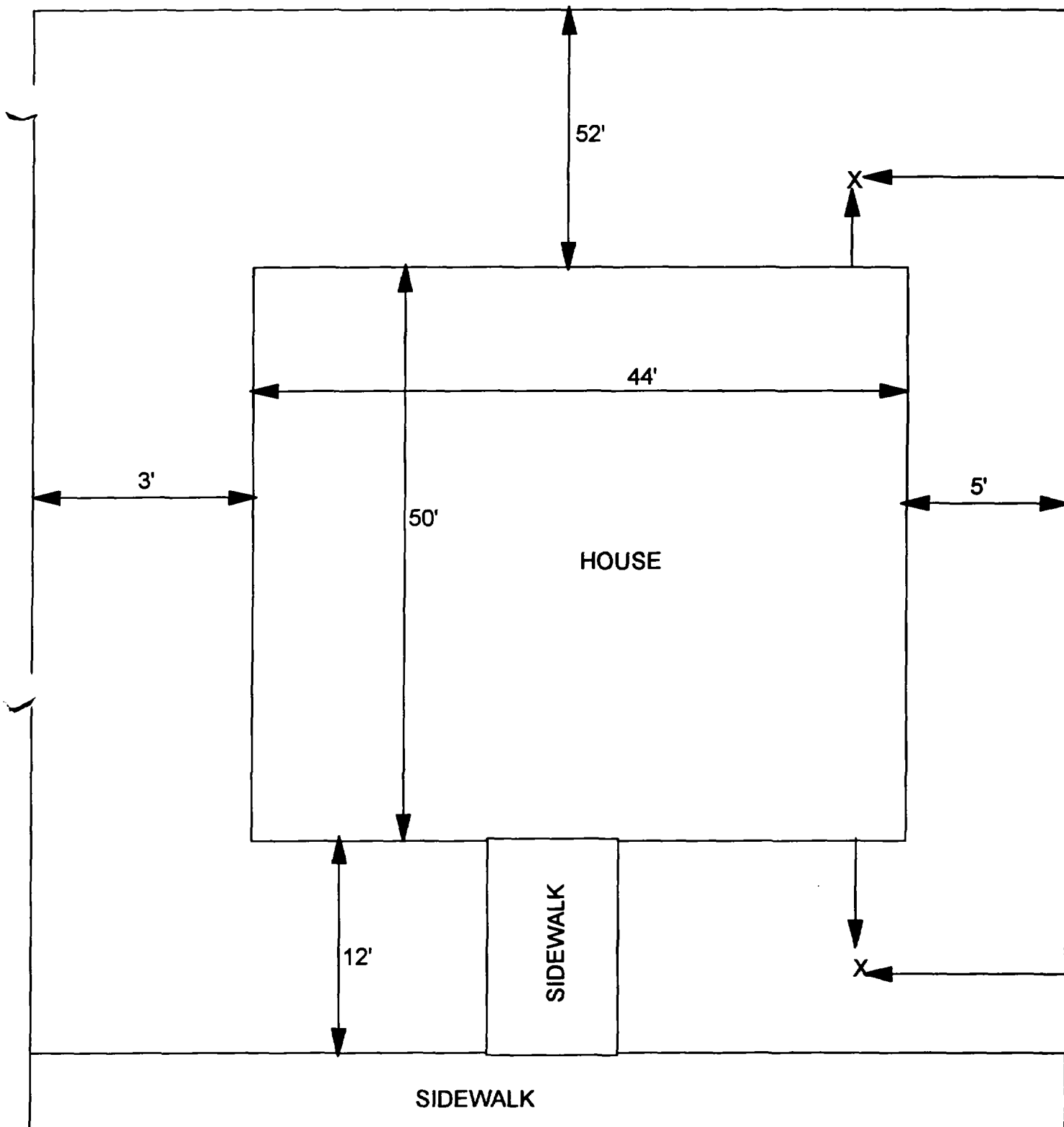
2112/14 Delmar

586 580

454 1240

266 409

12



X - SAMPLE POINT

2112/14 DELMAR
52' X 114'

OHM 
Corporation
Findlay, Ohio

Drawn By: **EDJ**

Checked By:

Date: **10/14/98**

Approved By:

Scale: **NTS**

Drawing No:

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2032 Edison

Action Date: 5/26/98

Loadout: 5/29/98

Restoration Begins: 5/29/98

Restoration Completed: 5/30/98

*Easements were not sampled for verification due to the fact that a pre-determined depth for excavation was given to OHM by USACE.

*An excavation depth of 6 inches was established by USACE prior to work commencing.

*The excavation of special waste yielded a total of 57.38 cubic yards, which was shipped to WMI-Milam for disposal.

*Equipment utilized during excavation:

*TL-26

*TCM

*X331

*17-KW

*Subcontractors:

*WMI-landfill

*B. Garcia-trucking

*Grantham-trucking

OHM CORPORATION
PROJECT 20366
GRANITE CITY, IL

QUANTITY SUMMARY FOR 2032 Edison

SPECIAL WASTE (TONS)	BACKFILL (LOADS)	TOPSOIL (TONS)	CA-6 (TONS)	CA-7 (TONS)	SAND (TONS)	SOD CU.YDS.	CONCRETE	OTHER
74.59		43.85	32.67			180		

**Sampling Analysis
Project #20366**

0 - 3" Front and Back

	A	A	A
Street/Number	PPM	PPM	PPM
Address	No.	No.	No.

2032 Edison

365 457

3-6" Front and Back

B	B	B
PPM	PPM	PPM
No.	No.	No.

816 1767

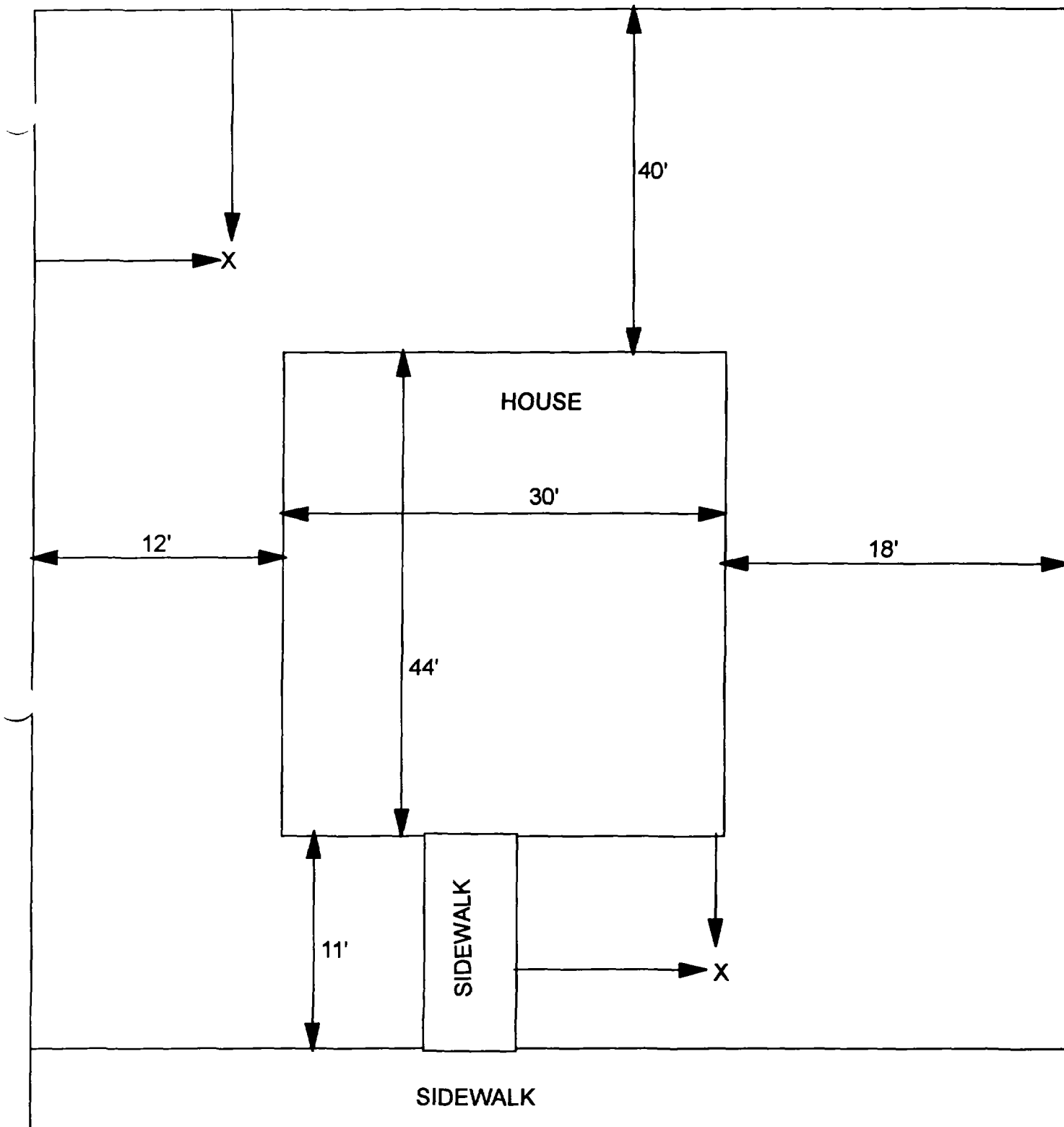
6-12" Front and Back

C	C	C
PPM	PPM	PPM
No.	No.	No.

276 341

Depth
Excav.
(inch)

6



X - SAMPLE POINT

2032 EDISON
60' X 95'

OHM
Corporation
Findlay, Ohio

Drawn By: EDJ	Checked By:
Date: 10/14/98	Approved By:
Scale: NTS	Drawing No:

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Action Date: 6/3/98

Loadout: 6/15/98

Restoration Begins: 6/15/98

Restoration Completed: 6/18/98

*Easements were not sampled for verification due to the fact that a pre-determined depth for excavation was given to OHM by USACE.

*An excavation depth of 3 inches was established by USACE prior to work commencing.

*The excavation of special waste yielded a total of 53.85 cubic yards, which was shipped to WMI-Milam for disposal.

*Equipment utilized during excavation:

*TL-26

*TCM

*X331

*17-KW

*Subcontractors:

*WMI-landfill

*B. Garcia-trucking

*Grantham-trucking

OHM CORPORATION
PROJECT 20366
GRANITE CITY, IL

QUANTITY SUMMARY FOR

2124 Delmar

SPECIAL WASTE (TONS)	BACKFILL (LOADS)	TOPSOIL (TONS)	CA-6 (TONS)	CA-7 (TONS)	SAND (TONS)	SOD CU.YDS.	CONCRETE	OTHER
70.01	2	15.15	73.31			180		

Sampling Analysis
Project #20366

0 - 3" Front and Back

	A	A	A
Street/Number	PPM	PPM	PPM
Address	No.	No.	No.

2124 Delmar
335 329
564 248
413 131

3-6" Front and Back

B	B	B
PPM	PPM	PPM
No.	No.	No.

273 258
217 220

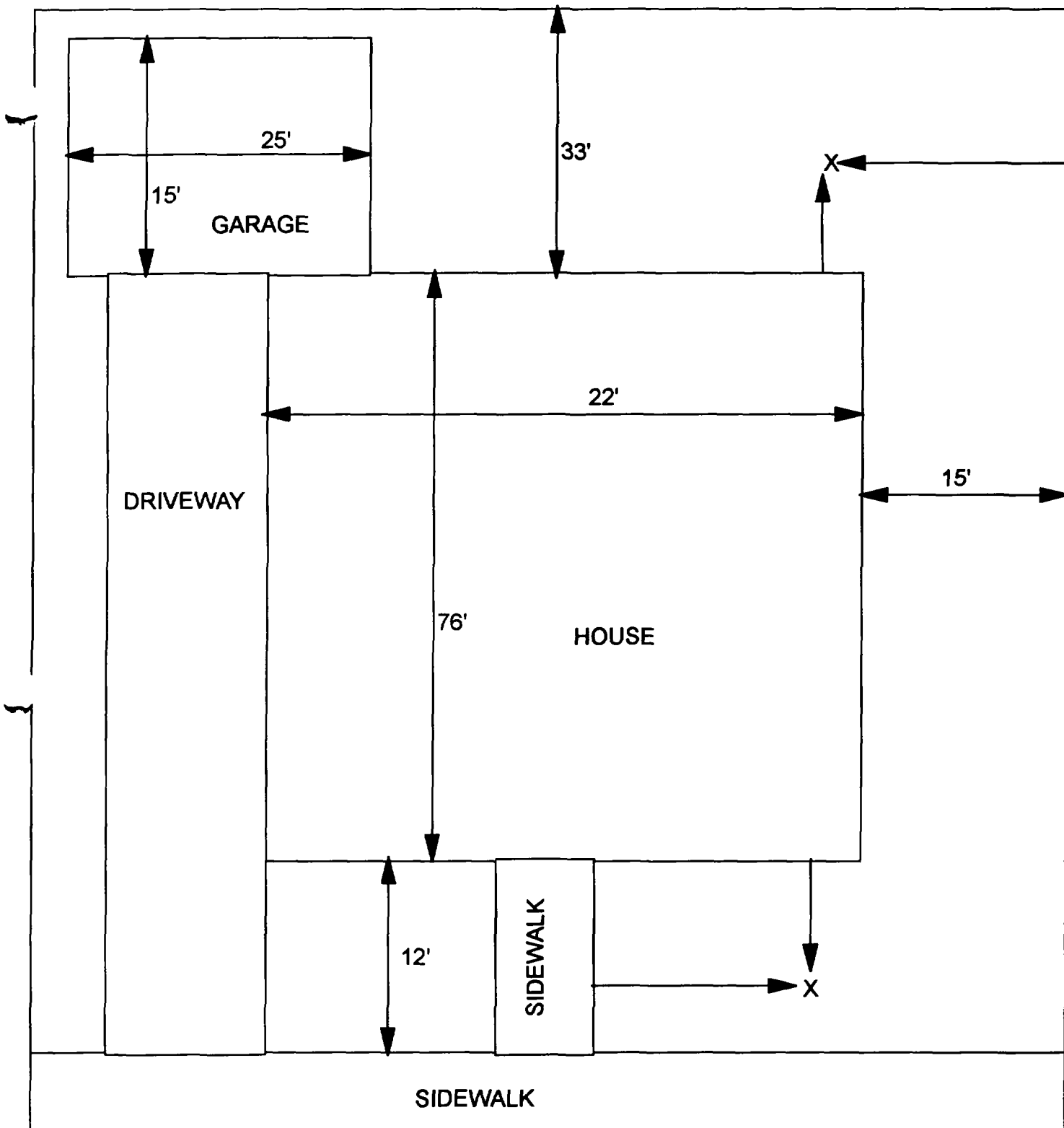
6-12" Front and Back

C	C	C
PPM	PPM	PPM
No.	No.	No.

158 157
92 676
42 181

Depth
Excav.
(inch)

3



X - SAMPLE POINT

2124 DELMAR
57' X 121'

OHM 
Corporation
Findlay, Ohio

Drawn By: **EDJ**

Checked By:

Date: **10/14/98**

Approved By:

Scale: **NTS**

Drawing No:

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Action Date: 6/2/98

Loadout: 6/2/98

Restoration Begins: 6/3/98

Restoration Completed: 6/3/98

*Easements were not sampled for verification due to the fact that a pre-determined depth for excavation was given to OHM by USACE.

*An excavation depth of 3 inches was established by USACE prior to work commencing.

*The excavation of special waste yielded a total of 30.58 cubic yards, which was shipped to WMI-Milam for disposal.

*Equipment utilized during excavation:

*TL-26

*TCM

*X331

*17-KW

*Subcontractors:

*WMI-landfill

*B. Garcia-trucking

*Grantham-trucking

OHM CORPORATION
PROJECT 20366
GRANITE CITY, IL

QUANTITY SUMMARY FOR 2125 1/2 Edison

SPECIAL WASTE (TONS)	BACKFILL (LOADS)	TOPSOIL (TONS)	CA-6 (TONS)	CA-7 (TONS)	SAND (TONS)	SOD CU.YDS.	CONCRETE	OTHER
39.75		29.41	14.07	28.03		120		

**Sampling Analysis
Project #20366**

0 - 3" Front and Back

	A	A	A
Street/Number	PPM	PPM	PPM
Address	No.	No.	No.

2125 1/2 Edison 339 **622**
 240 **633**

3-6" Front and Back

B	B	B
PPM	PPM	PPM
No.	No.	No.

396 246

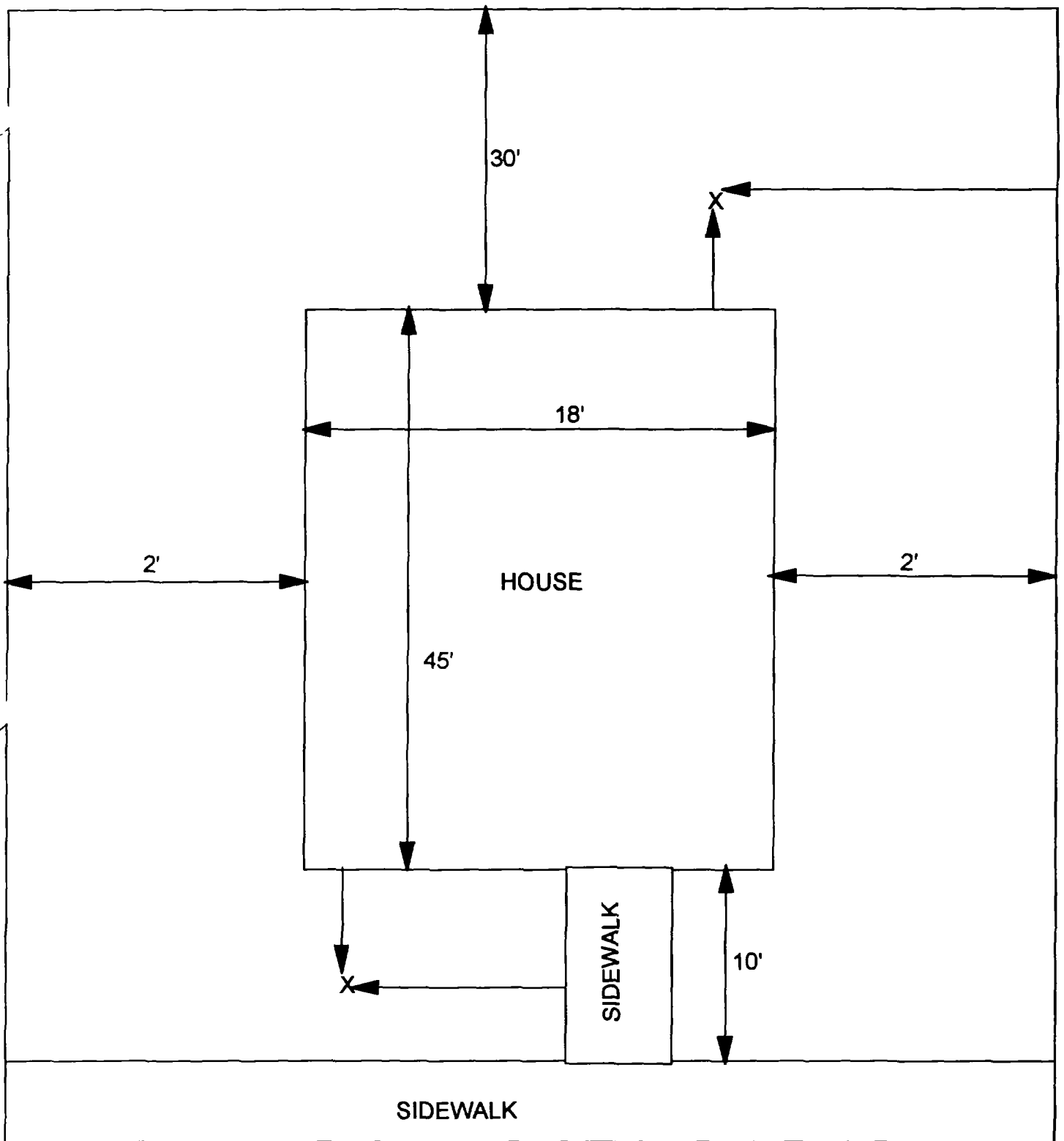
6-12" Front and Back

C	C	C
PPM	PPM	PPM
No.	No.	No.

374 96

Depth Excav. (inch)

3



X - SAMPLE POINT

2125 1/2 EDISON
22' X 85'

OHM 
Corporation
Findlay, Ohio

Drawn By: **EDJ**

Checked By:

Date: **10/14/98**

Approved By:

Scale: **NTS**

Drawing No:

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2208 Edison

Action Date: 5/26/98

Loadout: 5/27/98

Restoration Begins: 5/27/98

Restoration Completed: 5/30/98

*Easements were not sampled for verification due to the fact that a pre-determined depth for excavation was given to OHM by USACE.

*An excavation depth of 6 inches was established by USACE prior to work commencing.

*The excavation of special waste yielded a total of 54.99 cubic yards, which was shipped to WMI-Milam for disposal.

*Equipment utilized during excavation:

*TL-26

*TCM

*X331

*17-KW

*Subcontractors:

*WMI-landfill

*B. Garcia-trucking

*Grantham-trucking

OHM CORPORATION
PROJECT 20366
GRANITE CITY, IL

QUANTITY SUMMARY FOR

2208 Edison

SPECIAL WASTE (TONS)	BACKFILL (LOADS)	TOPSOIL (TONS)	CA-6 (TONS)	CA-7 (TONS)	SAND (TONS)	SOD CU.YDS.	CONCRETE	OTHER
71.49		42.60				360		

**Sampling Analysis
Project #20366**

0 - 3" Front and Back				
Street/Number Address	A	A	A	A
	PPM	PPM	PPM	PPM
	No.	No.	No.	No.

2208 Edison

620

767

3-6" Front and Back				
B	B	B	B	B
	PPM	PPM	PPM	PPM
	No.	No.	No.	No.

432

688

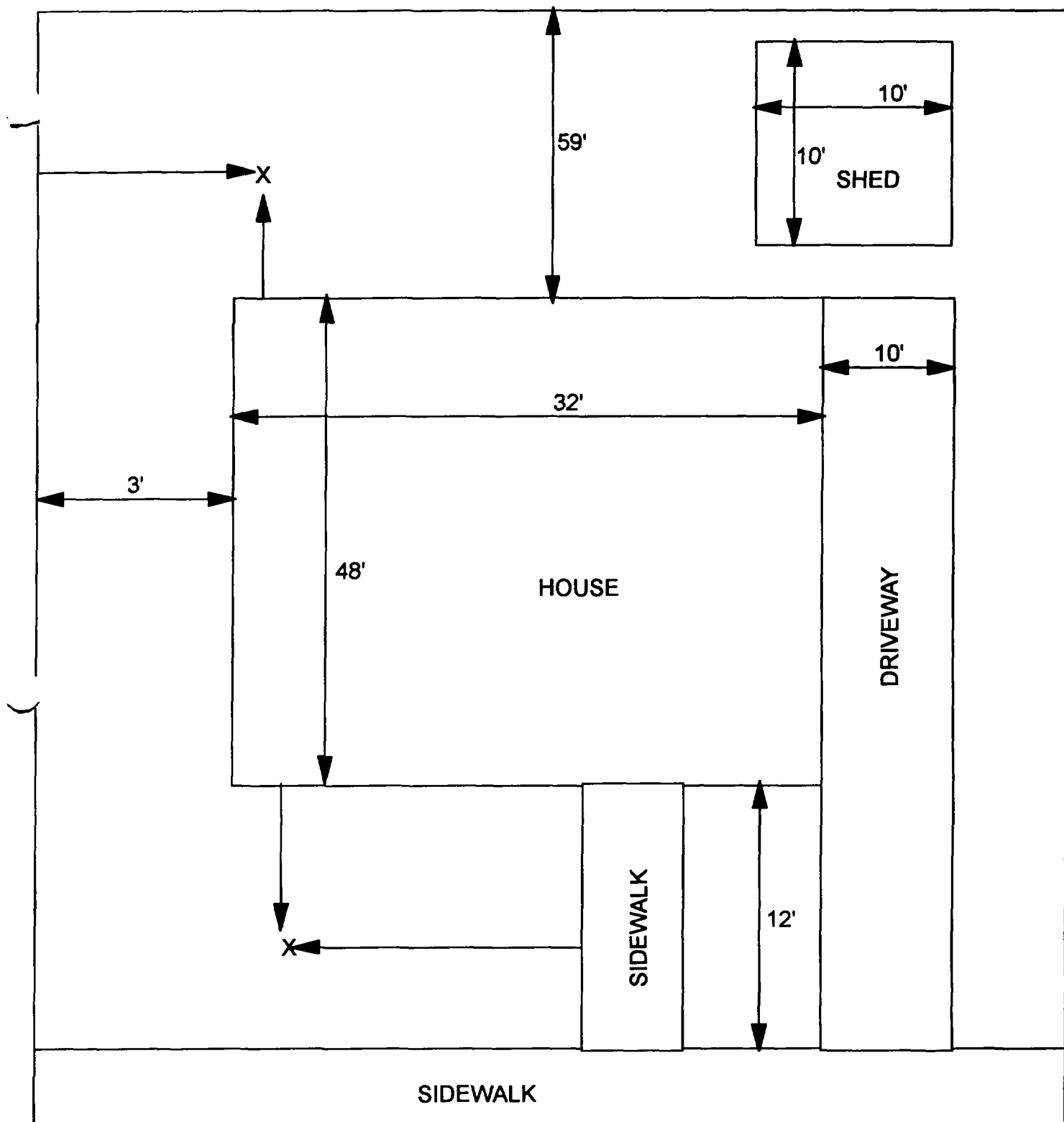
6-12" Front and Back				
C	C	C	C	C
	PPM	PPM	PPM	PPM
	No.	No.	No.	No.

119

284

Depth Excav. (inch)

6



X - SAMPLE POINT

2208 EDISON
45' X 119'

OHM 
Corporation
Findlay, Ohio

Drawn By: **EDJ**

Checked By:

Date: **10/14/98**

Approved By:

Scale: **NTS**

Drawing No:

1

2

3

Action Date: 1/23/98

Loadout: 1/23/98

Restoration Begins: 1/26/98

Restoration Completed: 1/26/98

*Easements were not sampled for verification due to the fact that a pre-determined depth for excavation was given to OHM by USACE.

*An excavation depth of 6 inches was established by USACE prior to work commencing.

*The excavation of special waste yielded a total of 66.75 cubic yards, which was shipped to WMI-Milam for disposal.

*Equipment utilized during excavation:

*TL-26

*TCM

*X331

*17-KW

*Subcontractors:

*WMI-landfill

*B. Garcia-trucking

*Grantham-trucking

OHM CORPORATION
PROJECT 20366
GRANITE CITY, IL

QUANTITY SUMMARY FOR

2212/14 Edison

SPECIAL WASTE (TONS)	BACKFILL (LOADS)	TOPSOIL (TONS)	CA-6 (TONS)	CA-7 (TONS)	SAND (TONS)	SOD CU.YDS.	CONCRETE	OTHER
86.78	3	10.15	69.16	9.54		120		

**Sampling Analysis
Project #20366**

0 - 3" Front and Back

	A	A	A
Street/Number	PPM	PPM	PPM
Address	No.	No.	No.

2212/14 Edison

545 561 672

3-6" Front and Back

B	B	B
PPM	PPM	PPM
No.	No.	No.

**151 136 650
543 1783**

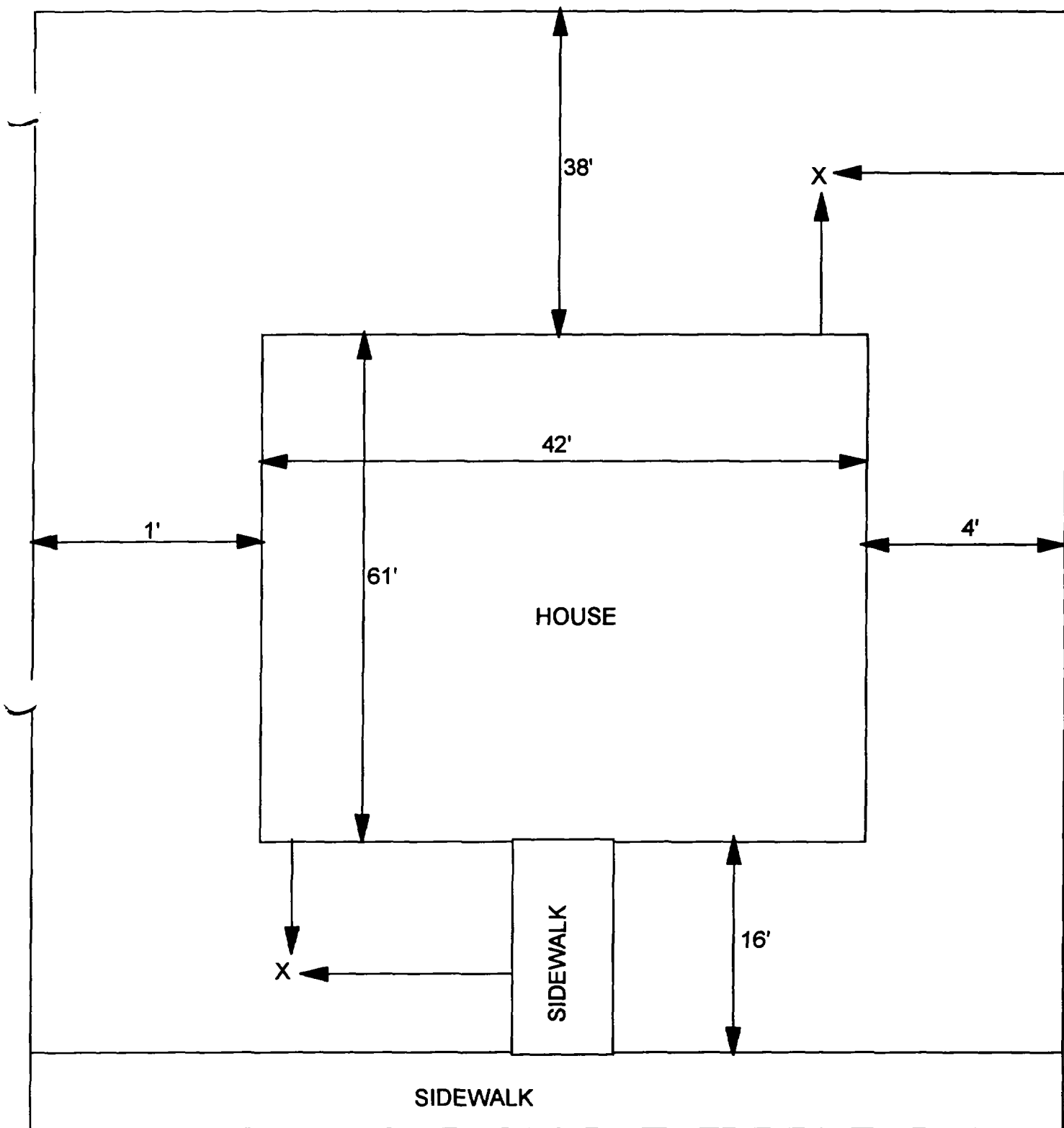
6-12" Front and Back

C	C	C
PPM	PPM	PPM
No.	No.	No.

61 89 393

Depth
Excav.
(inch)

6



X - SAMPLE POINT

2212/14 EDISON
47' X 115'

OHM Corporation
Findley, Ohio

Drawn By: **EDJ**

Checked By:

Date: **10/14/98**

Approved By:

Scale: **NTS**

Drawing No:

,

,

,

801/03 Grand

Action Date: 6/3/98

Loadout: 6/18/98

Restoration Begins: 6/18/98

Restoration Completed: 6/22/98

*Easements were not sampled for verification due to the fact that a pre-determined depth for excavation was given to OHM by USACE.

*An excavation depth of 6 inches was established by USACE prior to work commencing.

*The excavation of special waste yielded a total of 127.90 cubic yards, which was shipped to WMI-Milam for disposal.

*Equipment utilized during excavation:

*TL-26

*TCM

*X331

*17-KW

*Subcontractors:

*WMI-landfill

*B. Garcia-trucking

*Grantham-trucking

OHM CORPORATION
PROJECT 20366
GRANITE CITY, IL

QUANTITY SUMMARY FOR

801/03 Grand

SPECIAL WASTE (TONS)	BACKFILL (LOADS)	TOPSOIL (TONS)	CA-6 (TONS)	CA-7 (TONS)	SAND (TONS)	SOD CU.YDS.	CONCRETE	OTHER
166.27	14	40.14	15.79			960		

**Sampling Analysis
Project #20366**

0 - 3" Front and Back

	A	A	A
Street/Number	PPM	PPM	PPM
Address	No.	No.	No.

801/03 Grand

187 646
318 62

3-6" Front and Back

B	B	B
PPM	PPM	PPM
No.	No.	No.

170 631
406 78

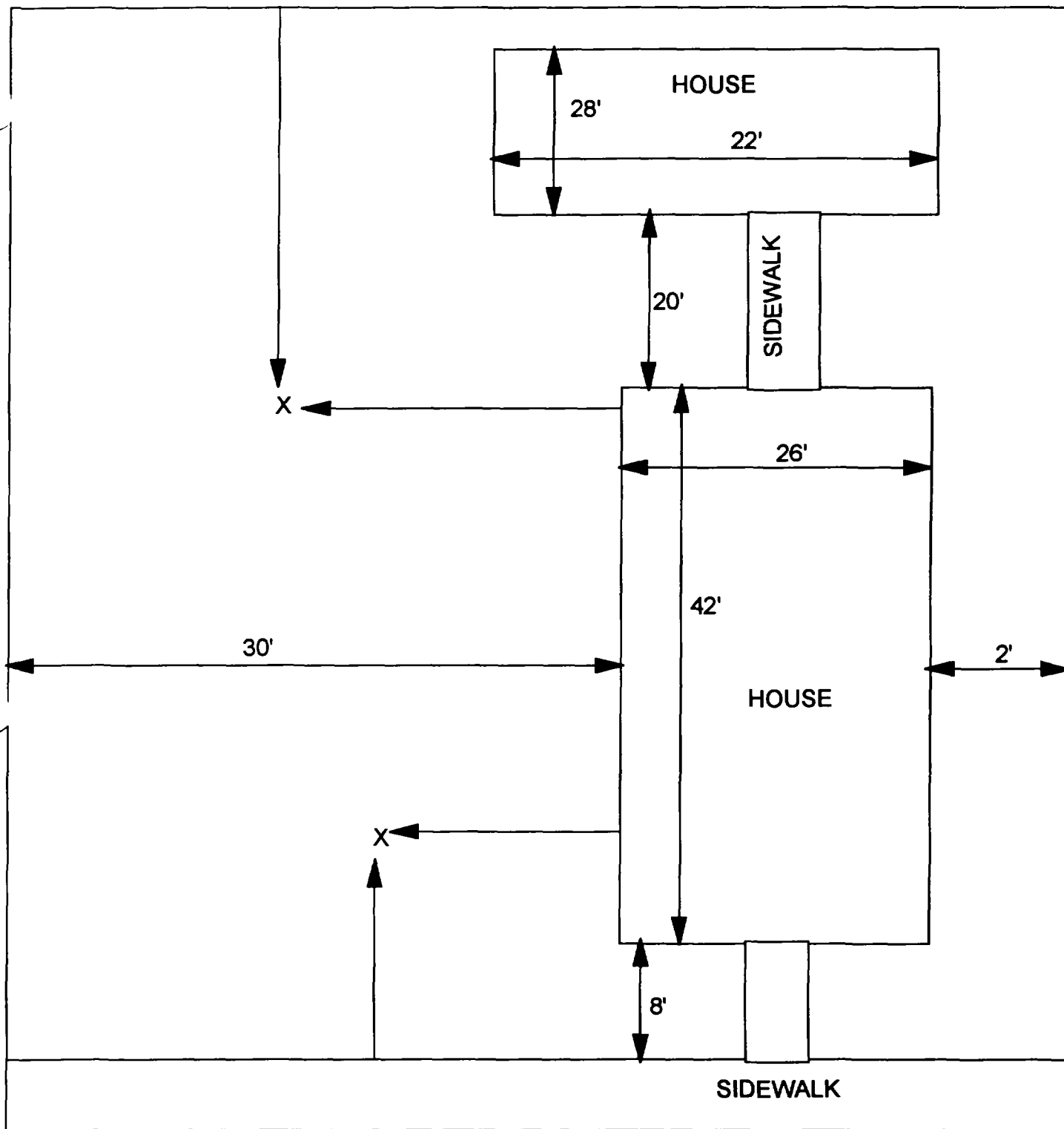
6-12" Front and Back

C	C	C
PPM	PPM	PPM
No.	No.	No.

192 412

Depth
Excav.
(inch)

6



X - SAMPLE POINT

801/03 GRAND
58' X 98'

OHM 
Corporation
Findlay, Ohio

Drawn By: EDJ	Checked By:
Date: 10/14/98	Approved By:
Scale: NTS	Drawing No:

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805 Grand

Action Date: 6/3/98

Loadout: 6/15/98

Restoration Begins: 6/15/98

Restoration Completed: 6/22/98

*Easements were not sampled for verification due to the fact that a pre-determined depth for excavation was given to OHM by USACE.

*An excavation depth of 12 inches was established by USACE prior to work commencing.

*The excavation of special waste yielded a total of 18.48 cubic yards, which was shipped to WMI-Milam for disposal.

*Equipment utilized during excavation:

*TL-26

*TCM

*X331

*17-KW

*Subcontractors:

*WMI-landfill

*B. Garcia-trucking

*Grantham-trucking

OHM CORPORATION
PROJECT 20366
GRANITE CITY, IL

QUANTITY SUMMARY FOR 805 Grand

SPECIAL WASTE (TONS)	BACKFILL (LOADS)	TOPSOIL (TONS)	CA-6 (TONS)	CA-7 (TONS)	SAND (TONS)	SOD CU.YDS.	CONCRETE	OTHER
24.02	4	13.75				120		

**Sampling Analysis
Project #20366**

0 - 3" Front and Back			
	A	A	A
Street/Number	PPM	PPM	PPM
Address	No.	No.	No.

805 Grand

850

816

3-6" Front and Back			
B	B	B	B
PPM	PPM	PPM	PPM
No.	No.	No.	No.

947

2050

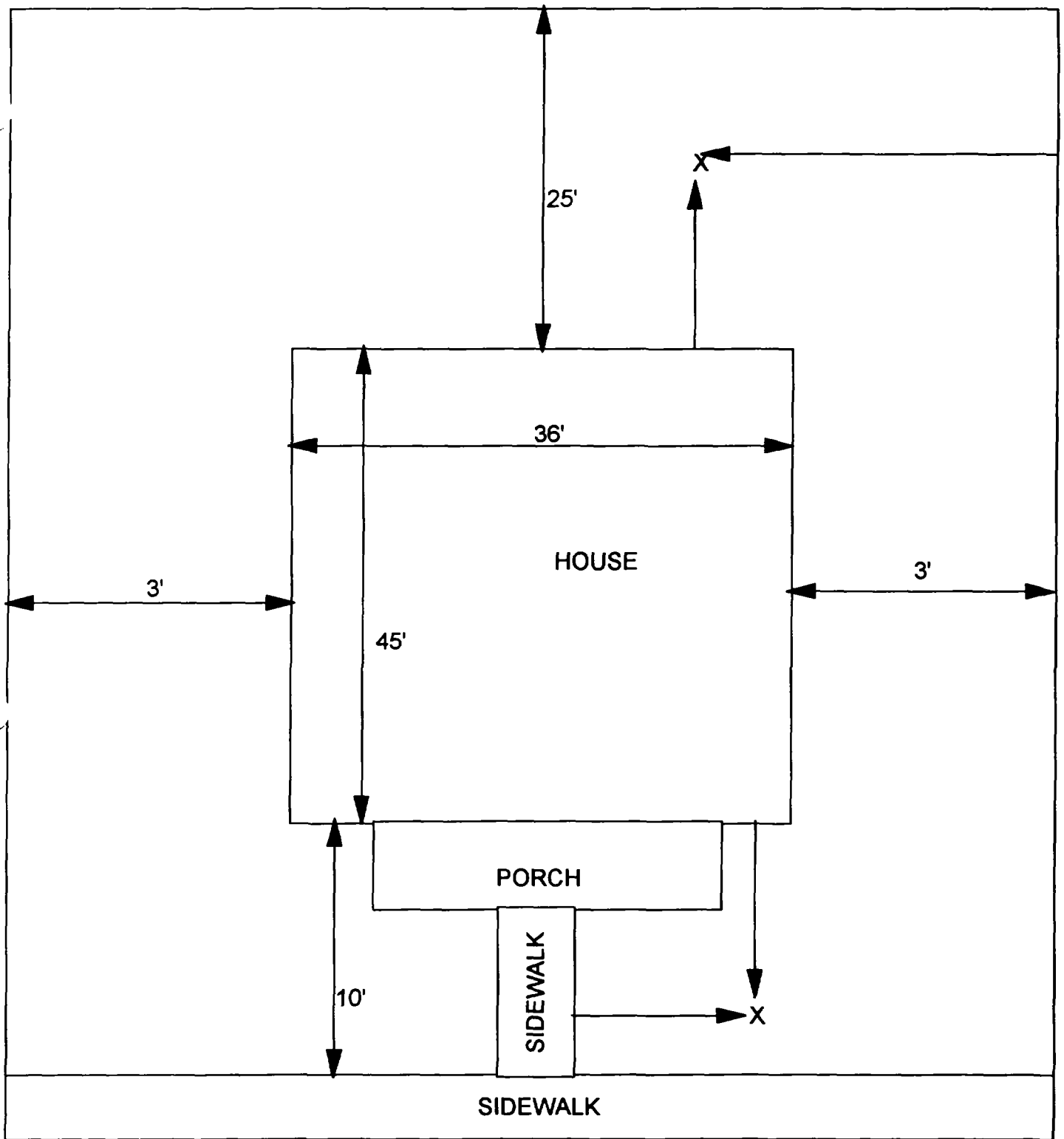
6-12" Front and Back			
C	C	C	C
PPM	PPM	PPM	PPM
No.	No.	No.	No.

812

986

Depth
Excav.
(inch)

12



X - SAMPLE POINT

805 GRAND
42' X 80'

OHM 
Corporation
Findlay, Ohio

Drawn By: EDJ	Checked By:
Date: 10/14/98	Approved By:
Scale: NTS	Drawing No:

823 Grand

Action Date: 5/26/98

Loadout: 5/28/98

Restoration Begins: 5/28/98

Restoration Completed: 6/2/98

*Easements were not sampled for verification due to the fact that a pre-determined depth for excavation was given to OHM by USACE.

*An excavation depth of 12 inches was established by USACE prior to work commencing.

*The excavation of special waste yielded a total of 342.12 cubic yards, which was shipped to WMI-Milam for disposal.

*Equipment utilized during excavation:

*TL-26

*TCM

*X331

*17-KW

*Subcontractors:

*WMI-landfill

*B. Garcia-trucking

*Grantham-trucking

OHM CORPORATION
PROJECT 20366
GRANITE CITY, IL

QUANTITY SUMMARY FOR 823 Grand

SPECIAL WASTE (TONS)	BACKFILL (LOADS)	TOPSOIL (TONS)	CA-6 (TONS)	CA-7 (TONS)	SAND (TONS)	SOD CU.YDS.	CONCRETE	OTHER
444.76	25	68.80	158.75	28.09		510		

**Sampling Analysis
Project #20366**

0 - 3" Front and Back

	A		A	
Street/Number	PPM	No.	PPM	No.
Address	No.	No.	No.	No.

823 Grand
335 35
934 393
422 441

3-6" Front and Back

	B		B	
PPM	PPM	PPM	PPM	PPM
No.	No.	No.	No.	No.

348 34
998 232
372 2210

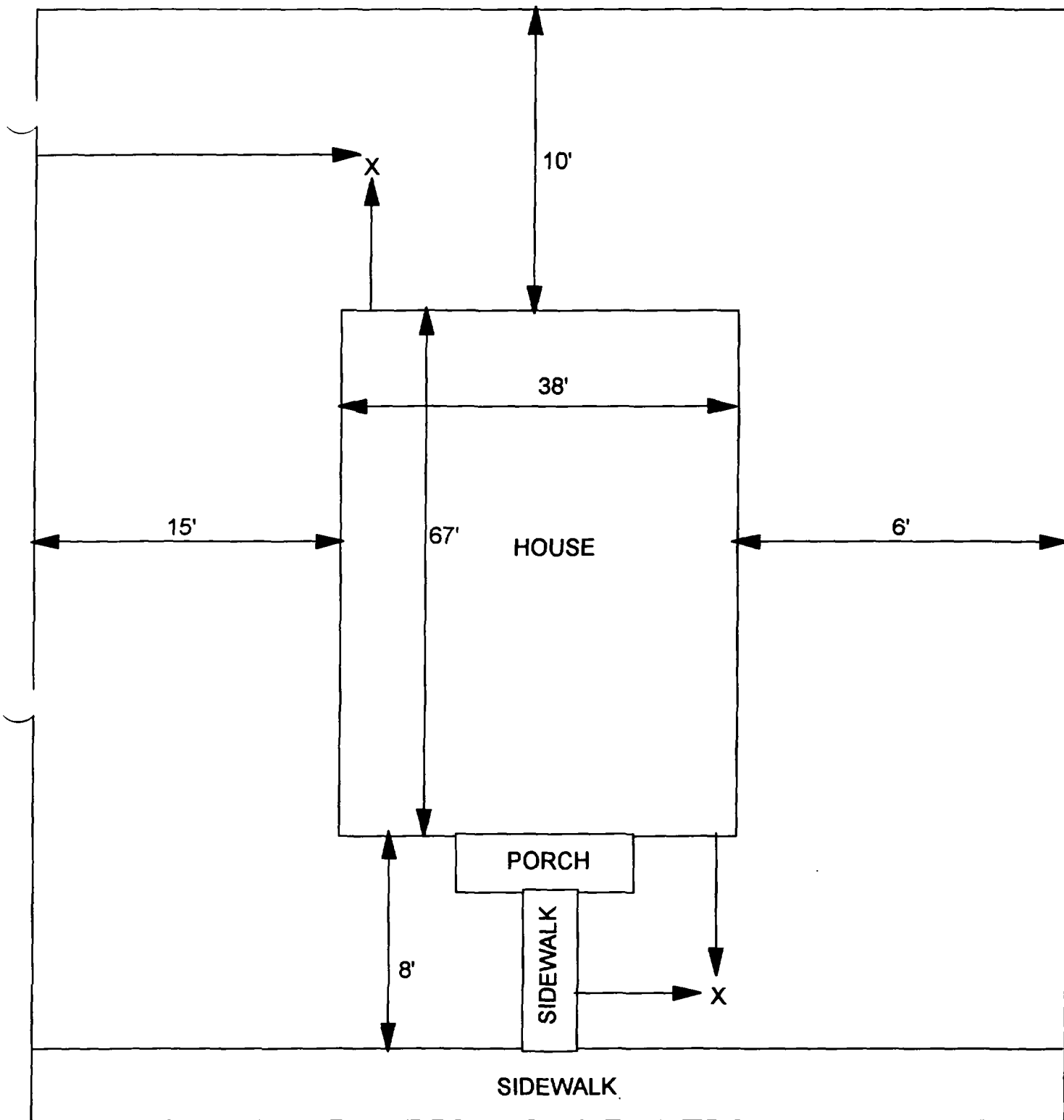
6-12" Front and Back

	C		C	
PPM	PPM	PPM	PPM	PPM
No.	No.	No.	No.	No.

192 41
698 203
298 3116

Depth
Excav.
(inch)

12



X - SAMPLE POINT

823 GRAND
59' X 84'

OHM 
Corporation
Findlay, Ohio

Drawn By: EDJ	Checked By:
Date: 10/14/98	Approved By:
Scale: NTS	Drawing No:

2039 State

Action Date: 5/28/98

Loadout: 6/1/98

Restoration Begins: 6/1/98

Restoration Completed: 6/3/98

*Easements were not sampled for verification due to the fact that a pre-determined depth for excavation was given to OHM by USACE.

*An excavation depth of 6 inches was established by USACE prior to work commencing.

*The excavation of special waste yielded a total of 42.03 cubic yards, which was shipped to WMI-Milam for disposal.

*Equipment utilized during excavation:

*TL-26

*TCM

*X331

*17-KW

*Subcontractors:

*WMI-landfill

*B. Garcia-trucking

*Grantham-trucking

OHM CORPORATION
PROJECT 20366
GRANITE CITY, IL

QUANTITY SUMMARY FOR 2039 State

SPECIAL WASTE (TONS)	BACKFILL (LOADS)	TOPSOIL (TONS)	CA-6 (TONS)	CA-7 (TONS)	SAND (TONS)	SOD CU.YDS.	CONCRETE	OTHER
54.64	2	13.75				420		

**Sampling Analysis
Project #20366**

0 - 3" Front and Back

	A		A	
Street/Number	PPM	No.	PPM	No.
Address	No.	No.	No.	No.

2039 State

505

789

3-6" Front and Back

B	B		B	
PPM	PPM	No.	PPM	No.
No.	No.	No.	No.	No.

454

1180

6-12" Front and Back

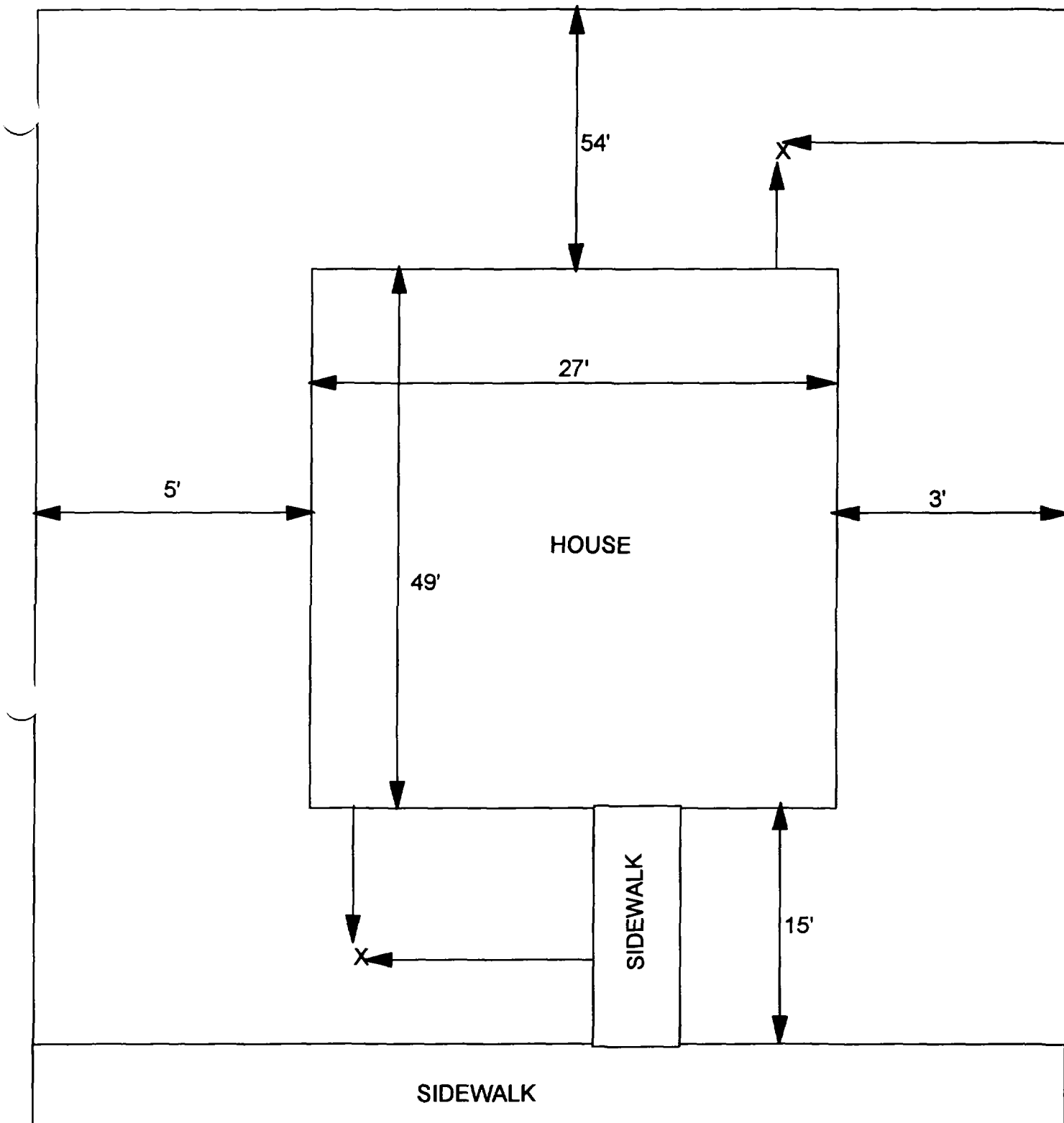
C	C		C	
PPM	PPM	No.	PPM	No.
No.	No.	No.	No.	No.

195

439

Depth
Excav.
(inch)

6



X - SAMPLE POINT

2039 STATE
35' X 118'

OHM 
Corporation
Findley, Ohio

Drawn By: **EDJ**

Checked By:

Date: **10/14/98**

Approved By:

Scale: **NTS**

Drawing No:

2110 State

Action Date: 5/26/98

Loadout: 5/28/98

Restoration Begins: 5/28/98

Restoration Completed: 6/1/98

*Easements were not sampled for verification due to the fact that a pre-determined depth for excavation was given to OHM by USACE.

*An excavation depth of 6 inches was established by USACE prior to work commencing.

*The excavation of special waste yielded a total of 320.08 cubic yards, which was shipped to WMI-Milam for disposal.

*Equipment utilized during excavation:

*TL-26

*TCM

*X331

*17-KW

*Subcontractors:

*WMI-landfill

*B. Garcia-trucking

*Grantham-trucking

OHM CORPORATION
PROJECT 20366
GRANITE CITY, IL

QUANTITY SUMMARY FOR

2110 State

SPECIAL WASTE (TONS)	BACKFILL (LOADS)	TOPSOIL (TONS)	CA-6 (TONS)	CA-7 (TONS)	SAND (TONS)	SOD CU.YDS.	CONCRETE	OTHER
416.10	52	43.80	30.51	14.93		510		

**Sampling Analysis
Project #20366**

0 - 3" Front and Back

	A	
Street/Number	PPM	No.
Address	No.	No.

2110 State

89 594
145 671

3-6" Front and Back

	B	
PPM	PPM	PPM
No.	No.	No.

26 541
181 444

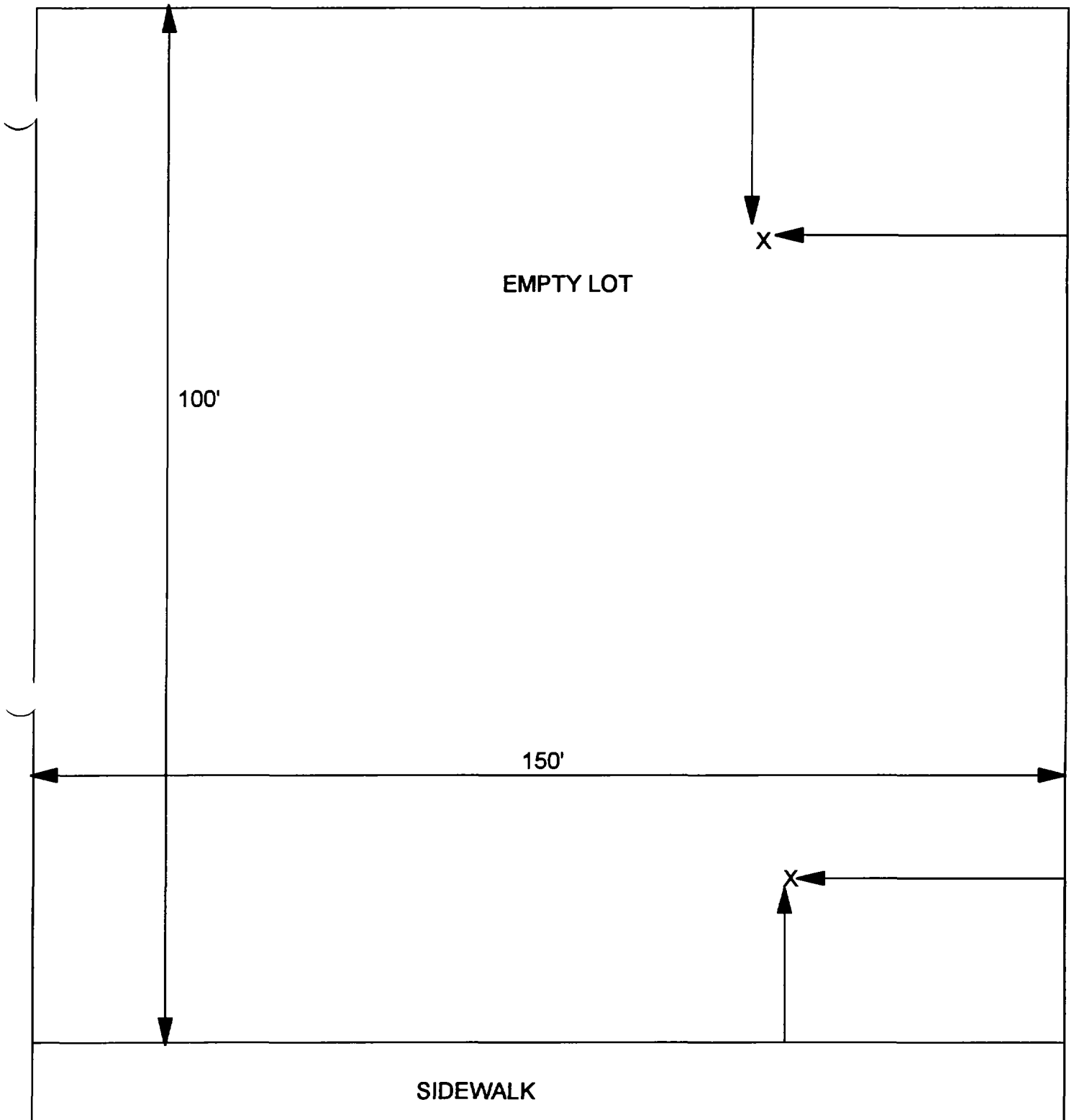
6-12" Front and Back

	C	
PPM	PPM	PPM
No.	No.	No.

19 260

Depth
Excav.
(inch)

6



X - SAMPLE POINT

2110 STATE
150' X 100'

OHM 
Corporation
Findley, Ohio

Drawn By:
EDJ

Checked By:

Date:
10/14/98

Approved By:

Scale:
NTS

Drawing No:

2150 State

Action Date: 6/1/98

Loadout: 6/3/98

Restoration Begins: 6/3/98

Restoration Completed: 6/22/98

*Easements were not sampled for verification due to the fact that a pre-determined depth for excavation was given to OHM by USACE.

*An excavation depth of 6 inches was established by USACE prior to work commencing.

*The excavation of special waste yielded a total of 67.09 cubic yards, which was shipped to WMI-Milam for disposal.

*Equipment utilized during excavation:

*TL-26

*TCM

*X331

*17-KW

*Subcontractors:

*WMI-landfill

*B. Garcia-trucking

*Grantham-trucking

OHM CORPORATION
PROJECT 20366
GRANITE CITY, IL

QUANTITY SUMMARY FOR

2150 State

SPECIAL WASTE (TONS)	BACKFILL (LOADS)	TOPSOIL (TONS)	CA-6 (TONS)	CA-7 (TONS)	SAND (TONS)	SOD CU.YDS.	CONCRETE	OTHER
32.54		38.65				180		

**Sampling Analysis
Project #20366**

0 - 3" Front and Back

	A		A	
Street/Number	PPM	No.	PPM	No.
Address	No.	No.	No.	No.

2150 State

326
1093

658
1120

3-6" Front and Back

B	B		B	
PPM	PPM	No.	PPM	No.
No.	No.	No.	No.	No.

327
603

512
510

6-12" Front and Back

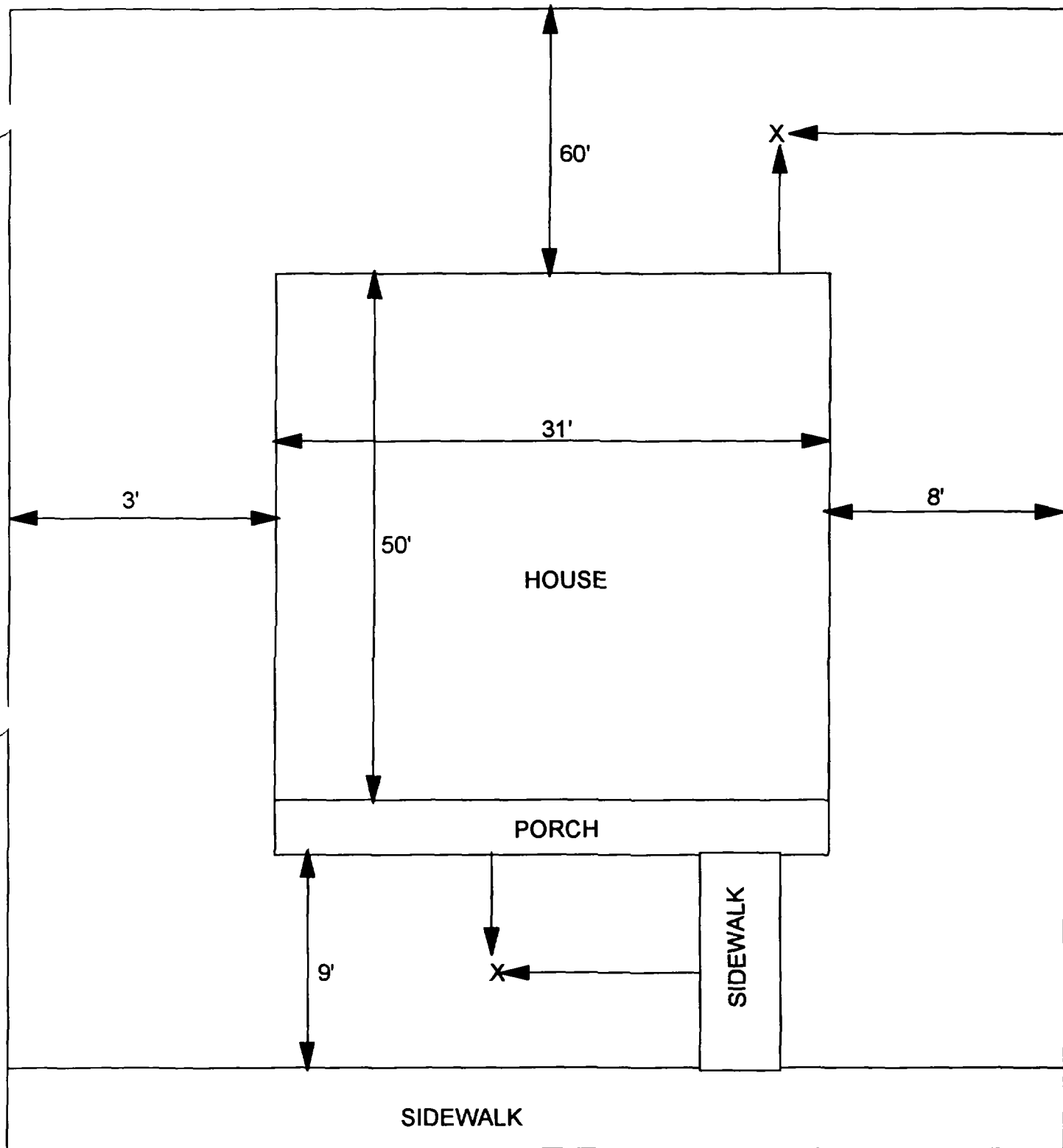
C	C		C	
PPM	PPM	No.	PPM	No.
No.	No.	No.	No.	No.

148

103

Depth
Excav.
(inch)

6



X - SAMPLE POINT

2150 STATE
42' X 119'

OHM
Corporation
Findlay, Ohio

Drawn By: EDJ	Checked By:
Date: 10/14/98	Approved By:
Scale: NTS	Drawing No:

1

2

3

2152 State

Action Date: 6/8/98

Loadout: 6/13/98

Restoration Begins: 6/13/98

Restoration Completed: 6/22/98

*Easements were not sampled for verification due to the fact that a pre-determined depth for excavation was given to OHM by USACE.

*An excavation depth of 6 inches was established by USACE prior to work commencing.

*The excavation of special waste yielded a total of 55.15 cubic yards, which was shipped to WMI-Milam for disposal.

*Equipment utilized during excavation:

*TL-26

*TCM

*X331

*17-KW

*Subcontractors:

*WMI-landfill

*B. Garcia-trucking

*Grantham-trucking

OHM CORPORATION
PROJECT 20366
GRANITE CITY, IL

QUANTITY SUMMARY FOR

2152 State

SPECIAL WASTE (TONS)	BACKFILL (LOADS)	TOPSOIL (TONS)	CA-6 (TONS)	CA-7 (TONS)	SAND (TONS)	SOD CU.YDS.	CONCRETE	OTHER
71.70	3		30.95	29.24		240		

**Sampling Analysis
Project #20366**

0 - 3" Front and Back

	A		A	
Street/Number	PPM	No.	PPM	PPM
Address	No.	No.	No.	No.

2152 State

222

347

3-6" Front and Back

	B		B	
PPM	PPM	PPM	PPM	PPM
No.	No.	No.	No.	No.

617

363

489

252

6-12" Front and Back

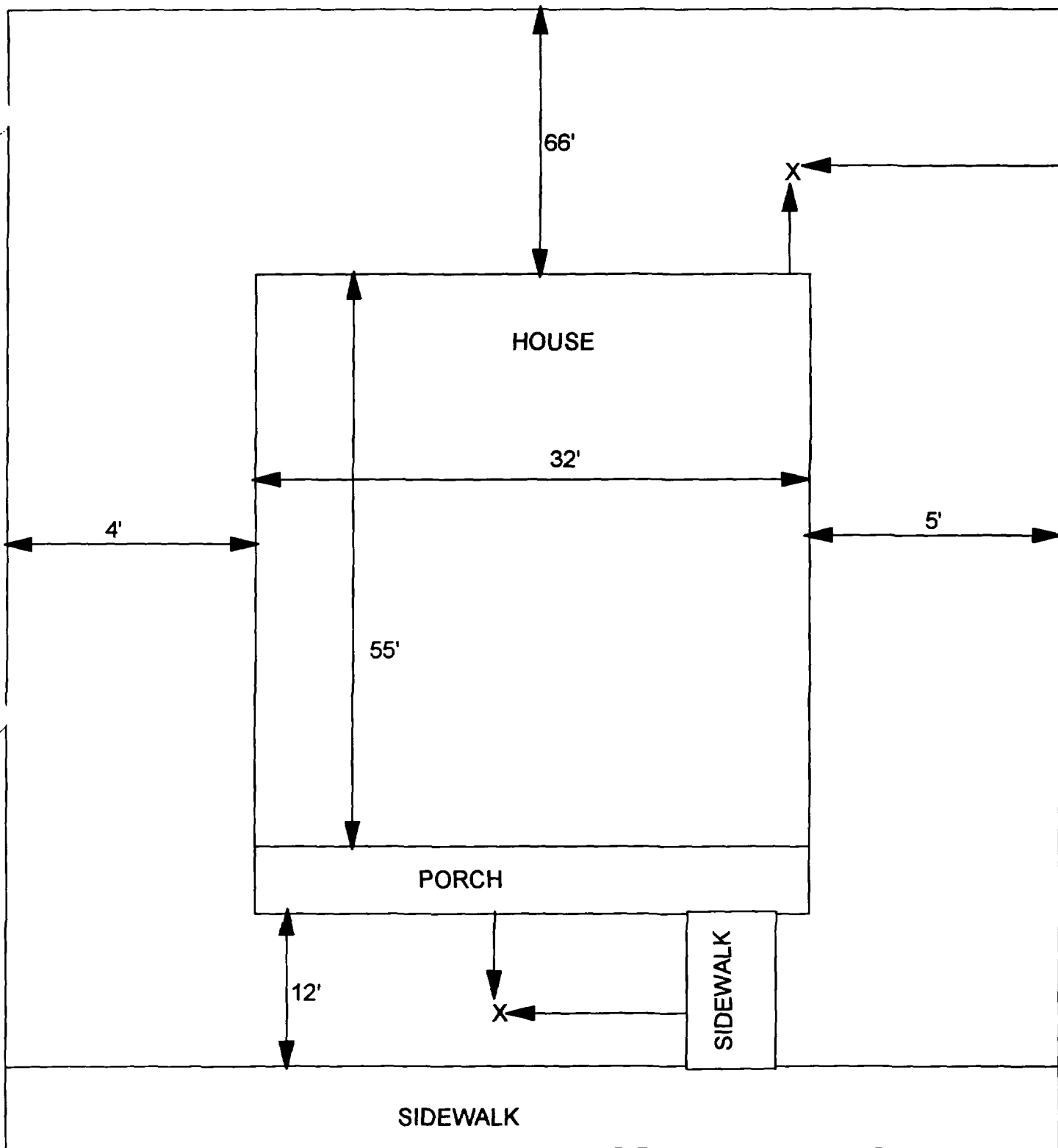
	C		C	
PPM	PPM	PPM	PPM	PPM
No.	No.	No.	No.	No.

457

233

Depth
Excav.
(inch)

6



X - SAMPLE POINT

2152 STATE
41' X 133'

OHM 
Corporation
Findlay, Ohio

Drawn By: **EDJ**

Checked By:

Date: **10/14/98**

Approved By:

Scale: **NTS**

Drawing No:

Action Date: 6/8/98

Loadout: 6/18/98

Restoration Begins: 6/18/98

Restoration Completed: 6/24/98

*Easements were not sampled for verification due to the fact that a pre-determined depth for excavation was given to OHM by USACE.

*An excavation depth of 3 inches was established by USACE prior to work commencing.

*The excavation of special waste yielded a total of 116.70 cubic yards, which was shipped to WMI-Milam for disposal.

*Equipment utilized during excavation:

*TL-26

*TCM

*X331

*17-KW

*Subcontractors:

*WMI-landfill

*B. Garcia-trucking

*Grantham-trucking

OHM CORPORATION
PROJECT 20366
GRANITE CITY, IL

QUANTITY SUMMARY FOR 2205/07 State

SPECIAL WASTE (TONS)	BACKFILL (LOADS)	TOPSOIL (TONS)	CA-6 (TONS)	CA-7 (TONS)	SAND (TONS)	SOD CU.YDS.	CONCRETE	OTHER
151.71	6	69.50	52.45	43.26		780		

Sampling Analysis
Project #20366

0 - 3" Front and Back

	A		A	
Street/Number	PPM	No.	PPM	No.
Address				

2205/07 State 232 1157
 30 30
 435 504

3-6" Front and Back

B	B	B	B
PPM	PPM	PPM	PPM
No.	No.	No.	No.

149 406

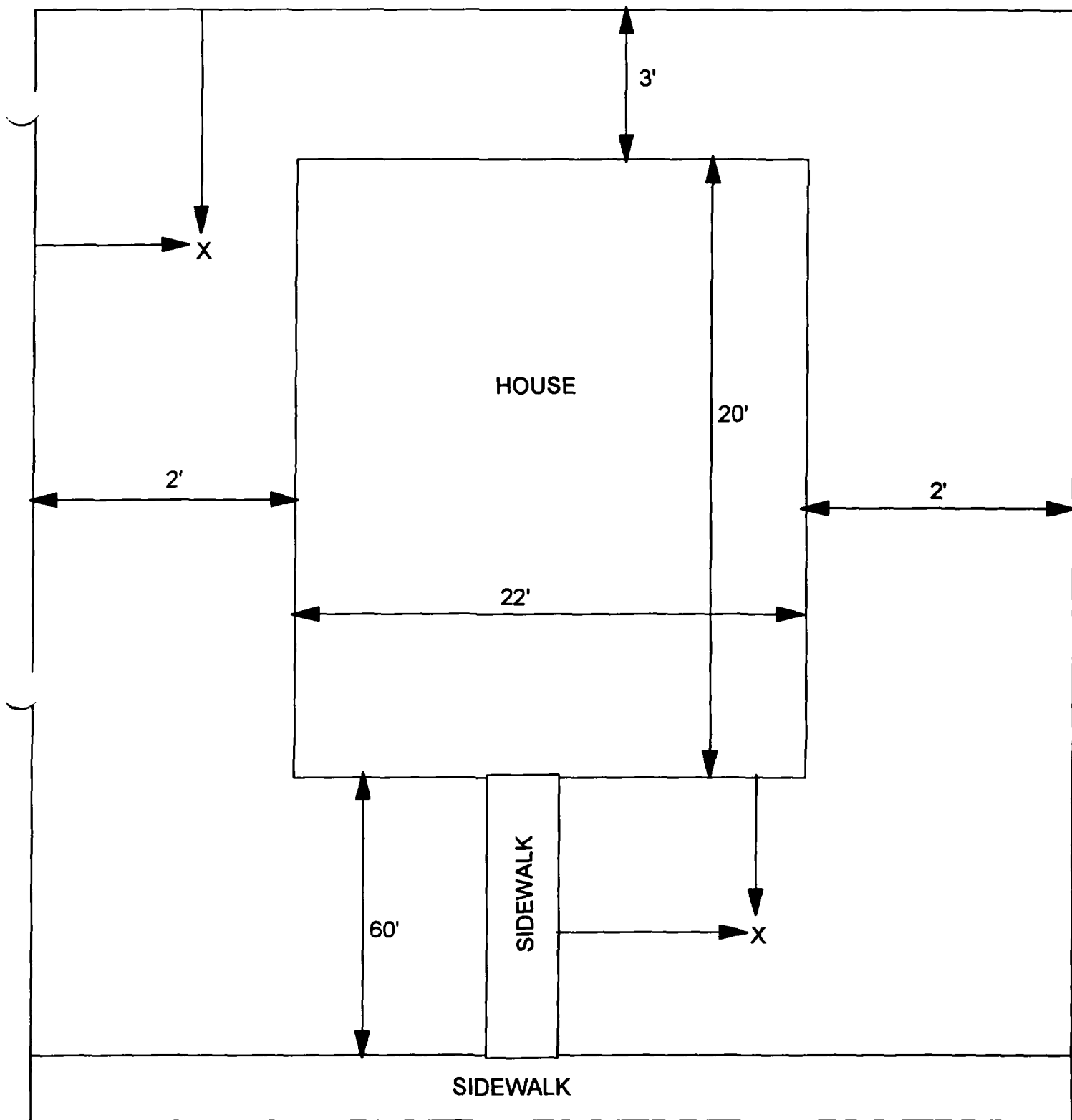
6-12" Front and Back

C	C	C	C
PPM	PPM	PPM	PPM
No.	No.	No.	No.

75 417

Depth
Excav.
(inch)

3



X - SAMPLE POINT

2205/07 STATE
26' X 88'

OHM 
Corporation
Findley, Ohio

Drawn By: EDJ	Checked By:
Date: 10/14/98	Approved By:
Scale: NTS	Drawing No:

)

)

)

2210 State

Action Date: 6/3/98

Loadout: 6/13/98

Restoration Begins: 6/13/98

Restoration Completed: 6/19/98

*Easements were not sampled for verification due to the fact that a pre-determined depth for excavation was given to OHM by USACE.

*An excavation depth of 6 inches was established by USACE prior to work commencing.

*The excavation of special waste yielded a total of 63.80 cubic yards, which was shipped to WMI-Milam for disposal.

*Equipment utilized during excavation:

*TL-26

*TCM

*X331

*17-KW

*Subcontractors:

*WMI-landfill

*B. Garcia-trucking

*Grantham-trucking

OHM CORPORATION
PROJECT 20366
GRANITE CITY, IL

QUANTITY SUMMARY FOR 2210 State

SPECIAL WASTE (TONS)	BACKFILL (LOADS)	TOPSOIL (TONS)	CA-6 (TONS)	CA-7 (TONS)	SAND (TONS)	SOD CU.YDS.	CONCRETE	OTHER
82.94	8	43.00				600		

**Sampling Analysis
Project #20366**

0 - 3" Front and Back

	A	A	A
Street/Number	PPM	PPM	PPM
Address	No.	No.	No.

2210 State 471 272

3-6" Front and Back

B	B	B
PPM	PPM	PPM
No.	No.	No.

287 845
188 58910

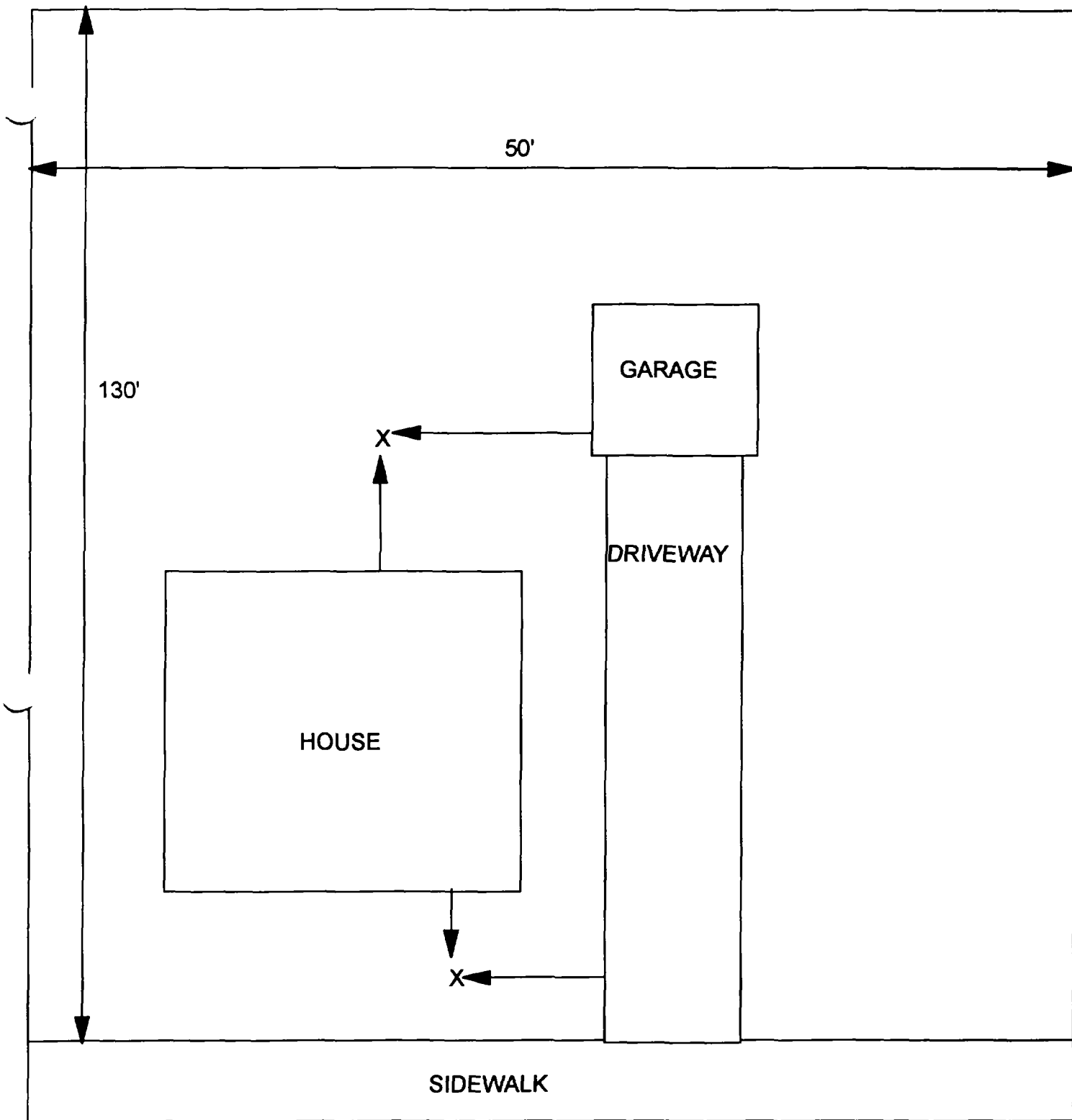
6-12" Front and Back

C	C	C
PPM	PPM	PPM
No.	No.	No.

97 382

Depth
Excav.
(inch)

6



X - SAMPLE POINT

2210 STATE
50' X 130'

OHM 
Corporation
Findlay, Ohio

Drawn By: **EDJ**

Checked By:

Date: **10/14/98**

Approved By:

Scale: **NTS**

Drawing No:

1

2

3

2211 State

Action Date: 6/3/98

Loadout: 6/13/98

Restoration Begins: 6/13/98

Restoration Completed: 6/19/98

*Easements were not sampled for verification due to the fact that a pre-determined depth for excavation was given to OHM by USACE.

*An excavation depth of 12 inches was established by USACE prior to work commencing.

*The excavation of special waste yielded a total of 99.90 cubic yards, which was shipped to WMI-Milam for disposal.

*Equipment utilized during excavation:

*TL-26

*TCM

*X331

*17-KW

*Subcontractors:

*WMI-landfill

*B. Garcia-trucking

*Grantham-trucking

OHM CORPORATION
PROJECT 20366
GRANITE CITY, IL

QUANTITY SUMMARY FOR 2211 State

SPECIAL WASTE (TONS)	BACKFILL (LOADS)	TOPSOIL (TONS)	CA-6 (TONS)	CA-7 (TONS)	SAND (TONS)	SOD CU.YDS.	CONCRETE	OTHER
129.87	7	171.05	15.40	14.55		546		

Sampling Analysis
Project #20366

0 - 3" Front and Back

	A	A	A
Street/Number	PPM	PPM	PPM
Address	No.	No.	No.

2211 State 1909 582

3-6" Front and Back

B	B	B
PPM	PPM	PPM
No.	No.	No.

386 712
409 397

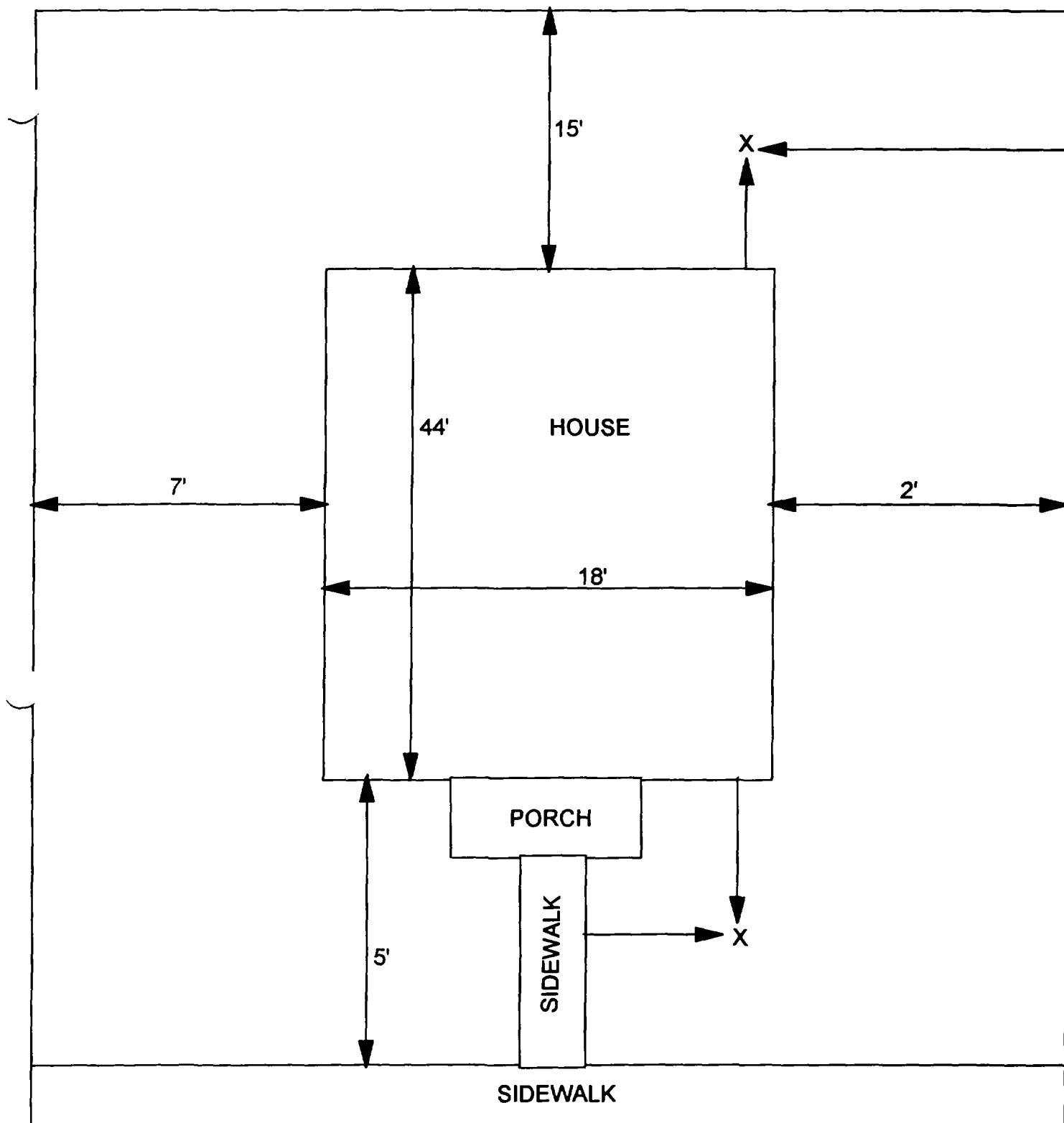
6-12" Front and Back

C	C	C
PPM	PPM	PPM
No.	No.	No.

301 778
439 306

Depth
Excav.
(inch)

12



X - SAMPLE POINT

2211 STATE
27' X 64'

OHM 
Corporation
Findlay, Ohio

Drawn By: **EDJ**

Checked By:

Date:
10/14/98

Approved By:

Scale: **NTS**

Drawing No:

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—

—

2215 State

Action Date: 6/3/98

Loadout: 6/13/98

Restoration Begins: 6/13/98

Restoration Completed: 6/22/98

*Easements were not sampled for verification due to the fact that a pre-determined depth for excavation was given to OHM by USACE.

*An excavation depth of 6 inches was established by USACE prior to work commencing.

*The excavation of special waste yielded a total of 69.18 cubic yards, which was shipped to WMI-Milam for disposal.

*Equipment utilized during excavation:

*TL-26

*TCM

*X331

*17-KW

*Subcontractors:

*WMI-landfill

*B. Garcia-trucking

*Grantham-trucking

OHM CORPORATION
PROJECT 20366
GRANITE CITY, IL

QUANTITY SUMMARY FOR

2215 State

SPECIAL WASTE (TONS)	BACKFILL (LOADS)	TOPSOIL (TONS)	CA-6 (TONS)	CA-7 (TONS)	SAND (TONS)	SOD CU.YDS.	CONCRETE	OTHER
89.93	6	28.90	27.43	26.07		600		

**Sampling Analysis
Project #20366**

0 - 3" Front and Back				
	A	A	A	A
Street/Number	PPM	PPM	PPM	PPM
Address	No.	No.	No.	No.

2215 State

760 248
392 514

3-6" Front and Back			
B	B	B	B
PPM	PPM	PPM	PPM
No.	No.	No.	No.

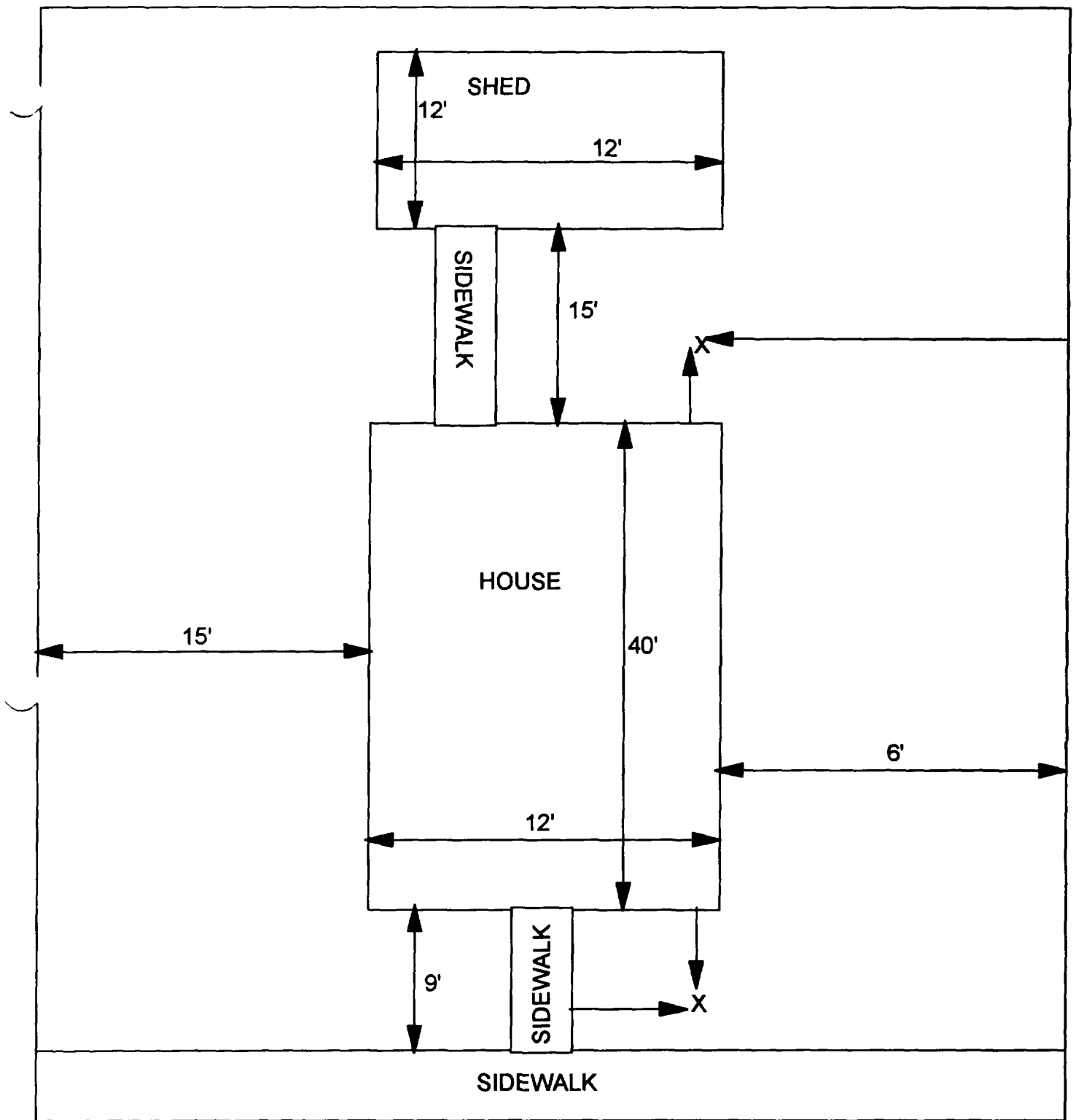
540 372
325 472

6-12" Front and Back			
C	C	C	C
PPM	PPM	PPM	PPM
No.	No.	No.	No.

149 204

Depth Excav. (inch)

6



X - SAMPLE POINT

2215 STATE
42' X 76'

OHM 
Corporation
Findlay, Ohio

Drawn By: EDJ	Checked By:
Date: 10/14/98	Approved By:
Scale: NTS	Drawing No:

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